

Statement About the War in Ukraine

A war, initiated by the Russian Federation, is taking place in Ukraine. The consequences of this war in terms of death, destruction and displacement of population are devastating and will have a detrimental impact for a long time in Ukraine and also worldwide.

The International Federation of Automatic Control (IFAC) aims to promote automatic control for the benefit of humankind. According to its mission and values of honesty and integrity, IFAC condemns this aggression and deplores its consequences.



Ukrainian flag photo downloaded from istockphoto.com, used with permission

The IFAC Executive Officers have decided on the following measures, which will be maintained as long as the military conflict is active.

Support to Ukrainian colleagues:

- The affiliates of IFAC are invited to provide as much support as needed to those Ukrainian colleagues and students that may ask for help in their professional and educational activities. Ukrainian colleagues are invited to contact the IFAC Secretariat that will establish links with IFAC affiliates who could provide help and support.
- The organizers of IFAC Conferences are invited to offer free registration to Ukrainian colleagues. If they seek compensation for the missed income they are invited to approach the IFAC Secretariat.
- IFAC waives the 2022 IFAC fees from the Ukrainian NMO and considers the possibility of financial support to Ukrainian scientific organizations.

Suspended cooperation with Russian governmental organizations:

- IFAC shall not organize any Conference in the Russian Federation or support any event led under the name of Russian organizations.
- This is by no means an action against individuals. Russian colleagues and students are welcome to participate in IFAC activities and IFAC shall be attentive to requests from those who may be facing difficulties related to the ongoing conflict.

Statement by the 2020-2023 IFAC Executive Officers: Hajime Asama (IFAC President), Frank Allgöwer, Dong-il Cho, John Lygeros, Dimitri Peaucelle, Carlos E. Pereira, Maria Prandini, & Sarah K. Spurgeon.

No.2

April 2022

IN THIS ISSUE:

[IFAC Statement About the War in Ukraine](#)

[IFAC World Congress 2023 Update](#)

[IFAC President's Column](#)

[Who's Who in IFAC: Introducing IFAC Control Cartoonist Brian Douglas](#)

[IFAC Council- and Related Meetings 2022: Preparations Underway](#)

[Reports from IFAC Conferences \(LHMNC-DE, ECC- NL/Online\)](#)

[IFAC Executive Officers' Meeting \(AT\)](#)

[Upcoming IFAC Conferences](#)

The IFAC Journals

Automatica

<http://www.journals.elsevier.com/automatica>

Control Engineering Practice

<http://www.journals.elsevier.com/control-engineering-practice>

Engineering Applications of Artificial Intelligence

<http://www.journals.elsevier.com/engineering-applications-of-artificial-intelligence>

Journal of Process Control

<http://www.journals.elsevier.com/journal-of-process-control>

Annual Reviews in Control

<http://www.journals.elsevier.com/annual-reviews-in-control>

Journal on Mechatronics

<http://www.journals.elsevier.com/mechatronics>

Nonlinear Analysis: Hybrid Systems

<http://www.journals.elsevier.com/nonlinear-analysis-hybrid-systems>

IFAC Journal of Systems & Control

<http://www.journals.elsevier.com/ifac-journal-of-systems-and-control>

IFAC-PapersOnLine

<http://www.journals.elsevier.com/ifac-papersonline>

IFAC World Congress 2023 UPDATE

The IFAC 2023 World Congress in Yokohama is just a year and three months away. The organizing committee is working together to maximize meeting opportunities amidst the global difficulties continuing from 2020.

The submission site in PaperCept will open in May 2022, and we are ready to accept your papers until the deadline in the fall. This announcement provides some updates on program highlights and reminders of important dates.

As stated in the President's message in this issue, the theme of the IFAC 2023 World Congress is "Wa", which literally means harmony in Japanese. Its symbol mark is as shown below. On the left, you see a variant of the IFAC symbol derived from the signal flow diagram, drawn in a combination of red and white streamers. This design is a traditional icon to express celebration, called "mizu-hiki" in Japanese, often used to decorate festive gifts for births, weddings, admission to higher schools, and so on. On the right, behind the figure "2023" is a silhouette of Mount Fuji associated with the sun, a beloved scenery known as "go-rai-kou" (which literally means solemn sunrise from high mountains).



We hope that this congress will provide an opportunity for control engineers and researchers worldwide to gather and discuss how to solve large-scale, complex problems for a better society and create new values for the future. The topics of the conference will cover all technical areas of IFAC, i.e., Systems & Signals, Design Methods, Computers, Cognition & Communication, Mechatronics, Robotics and Components, Manufacturing and Logistics Systems, Process and Power Systems, Transportation and Vehicles Systems, Bio- and Ecological Systems, and Social Systems.

Program Highlights

The national organizing committee will make every effort to facilitate as many face-to-face meetings as possible. Still, the congress will also be held in a hybrid format to cope with the likely lasting influences of the COVID-19 pandemic. The conference program consists of plenary lectures, regular technical presen-

tations, tutorials, forums and various attractive programs. Papers will be accepted in a variety of formats. We will continue to accept Regular and Invited papers, as well as Open Invited Track papers. Extended Abstracts, Discussions, Dissemination papers are also welcome, to support up-to-date contributions and stimulate lively exchanges of ideas. In addition to the professional meetings, we are also planning some public seminars for citizens and junior students (such as the workshop Girls in Control) in an effort to expand the reach of the control community.

A noteworthy feature of this IFAC World Congress is the activities of the Industry Group formed under the national organizing committee. In seventeen subgroups ranging from Mechatronic Systems, Power and Energy to Environmental Systems, many members from academia and industry have gathered for discussions aiming at genuine industry-academia collaboration. The conference will feature panel discussions, special lectures, competitions, exhibits, and demonstrations of cutting-edge technologies, as well as technical tours for visiting some of the industrial facilities of Japanese companies.

Congress Venue

The venue for the IFAC 2023 World Congress is Pacifico Yokohama. It is on the shore at the core downtown of Yokohama, which is a huge city adjacent to the capital, Tokyo, but with a slightly different flavor and backgrounds. Located in the historic port of call that determined Japan's modernization in the 19th century, Yokohama is an open-aired place where the old and the new, technology and nature meet. The committee members look forward to welcoming you there and hope all the participants enjoy the congress.

Important Dates

PaperCept submission site opens: May 2022
Open Invited Track proposals: September 2022
Invited Session proposals: October 2022
Regular/Invited papers submission: October 2022
Tutorials/Workshops/ Extended Abstracts submission: November 2022
Notification of acceptance: February 2023
Final Paper Submission: March 2023
Congress Dates: 8-14 July 2023

Call for Orchestra Members

As mentioned earlier in the article by Julian Berberich (Newsletter No. 2, February 2022), the IFAC Control Orchestra is looking for colleagues who have some musical experience.

This Newsletter may be reproduced in whole or in part.

We encourage electronic distribution of this Newsletter, as well as reprinting in national and local automatic control periodicals.

Acknowledgement to IFAC would be appreciated.

From the IFAC President

Dear IFAC Friends & Colleagues,

I am saddened to see that robot technology has been used to kill and harm people in the war that is Russia's invasion of Ukraine.

We scientists are motivated by curiosity, utility of technology, problem solving, and business. However, the relationship between science and society is becoming increasingly important, and even scientists can no longer simply pursue curiosity-driven research in an innocent manner. We are required to conduct our research taking account of the relationship.

On the other hand, technology is not always used as originally intended. It is often the case that a product is used in an unintended way that differs from the intention of the developer. Of course, developers cannot control how technology is used, and there are limits to how much government or law can restrict the usage. But we must monitor how the developed technology is used, and we must issue opinions or statements when it is used incorrectly.

The IFAC World Congress 2023 has a vision of "Wa (Harmony): Control for Solving Societal Problems and Creating Societal Values. There are several Chinese characters for "Wa", meaning Harmony, Peace, Calmness, Community, Sustainability, Circle, Feedback, Communication, Network, etc. This vision shows the goal of solving a variety of social issues, such as Energy, Environment, Health, Food, Disaster, and so on, by building a global feedback loop.

Having witnessed the loss of lives of many civilians in this war, I felt that we should rethink how we scientists and engineers should contribute to the great social challenge of achieving peace.

The preamble of the IFAC Constitution states "We have the Vision for IFAC to be the worldwide federation for promoting automatic control for the benefit of humankind and consequently we deviate the Mission for IFAC to promote the science and technology of automatic control through technical meetings, publications and other means consistent with the goals and values of IFAC".

Human rights, freedom, and peace are the very basis of science and technology, and any actions against such values must be condemned. I respect the cooperation and solidarity of scientists and engineers to preserve the values of IFAC. Let us unite as an international academic community of scientists, and cooperate for the realization of peace of the society and well-being of all the people.

Best regards,

Hajime Asama,
IFAC President 2020-2023

To register as an IFAC affiliate or to update your information please use the IFAC affiliate registration form.
ifac-control.org/about/ifac-affiliate-registration

If you are interested in performing, please visit the IFAC 2023 website and subscribe to the orchestra mailing list.

Website and Social Media

Finally, we are pleased to announce the renewal of the IFAC2023 website. Please visit the website and follow the Twitter account to access the latest information.

Website: <https://www.ifac2023.org/>
Twitter: @IFAC2023



Submitted by: IFAC 2023 Organizing Team
Jun-Ichi Imura (JP), General Chair

Who's Who in IFAC: Introducing Control Cartoonist Brian Douglas

IFAC Newsletter readers receiving their issues via email hopefully noticed the change in email format used in the sending of each issue. It now includes a control cartoon, which was implemented at the recommendation of the IFAC Newsletter Task Force. In this article readers have the opportunity to learn more about IFAC Control Cartoonist Brian Douglas.

Hello! My name is Brian Douglas. I play a control systems engineer on the internet and, as of the February issue of this newsletter, I am also a cartoonist. It wasn't always this way. My background is in the guidance, navigation, and control of space systems.



Control Cartoonist
Brian Douglas

I spent 10 years at Boeing working on some of the smallest satellites in the world and, for a brief year, on one of the largest airplanes in the world. After Boeing, I was the Director of Systems Engineering at Planetary Resources; a start up with the ambitious goal to mine asteroids for water to be used in situ for fuel and radiation shielding.

I enjoy creating and solving practical problems, but my passion has always been for teaching - or I suppose more precisely explaining topics in fun and intuitive ways. I found a creative outlet for that passion through YouTube where I started making videos to explain simple concepts in control theory.

After the funding at Planetary Resources dried up, I was lucky to be able to start engineering-media.com and turn my passion for creating educational content into a full-time job.

For the last four years, I have been making videos for the MATLAB Tech Talk series where I cover topics within control theory as well as tangential fields like robotics and machine learning. I have also started a free service called resourcium.org where I am creating a place for people to find fantastic educational resources, organize them into learning journeys, and share those journeys with others.

I have three main goals that help me determine which new projects to take on:

1. Find ways to introduce people to control theory.
2. Get people excited to learn more.
3. Connect people to other resources that will allow them to continue making progress.

Videos fulfill the second goal by, hopefully, getting people excited about a topic and motivating them to spend the necessary hours afterward to learn the real fundamentals. With Resourcium, I am trying to fulfill the third goal by connecting people to other resources where they can actually develop that fundamental knowledge. As for the first goal of introducing people to control theory, well, in January 2021 I received a fortuitous email from Moritz Schultz-Darup from TU Dortmund University (DE).

Moritz approached me to see if I would be interested in creating control related cartoons for the bi-monthly IFAC newsletter. The hope was that in the Venn diagram of control nerds and cartoonists, I somehow existed where the two circles overlap.

I think he had that impression because I had created the rather cartoonish looking Map of Control theory. However, to be honest, I do not exist in the overlap - at least not then. The only control joke I knew was the one that everyone kept sending to me about poles moving to the right half of the plane.



Despite my obvious lack of experience, I was excited for this opportunity because I think humor can reach a wider audience than education and I'm eager to bring more awareness to the wonderful field of control theory. (Spoiler

warning! This seems promising so far because the first cartoon on the Dunning-Kruger effect for control engineers has been viewed over 200,000 times!)

I am aware of the fact that I have some pretty big shoes to fill. Suresh M. Joshi regularly contributed control cartoons to the IEEE Control Systems Magazine between 1985 and 1994. He has 88 (!) hilarious cartoons that he shares on his website, controlcartoons.com. And now having read them all, I unfortunately realize how many great jokes are off the market for my own cartoons.

However, I am looking forward to sharing my style of humor with you and maybe with feedback from the community to keep me stable and on track I can continue the tradition of exposing the lighter side of control theory. Please feel free to send all of your funny ideas to brian@engineeringmedia.com. I could use all the help I can get!

Submitted by: Brian Douglas, IFAC Control Cartoonist

Preparations for IFAC Council- and Related Meetings 2022 are underway!

At the 2021 Council meeting it was decided to hold IFAC's annual 2022 Council- and Related Meetings in conjunction with the ECC 2022 in London, UK at Imperial College's Electrical Engineering Building, South Kensington Campus, London SW7 2AZ (with the option of remote participation). Due to the ongoing pandemic situation please check often for updates!

Information about the ECC location, travel, information, London, etc. can be found at: <https://ecc22.euca-ecc.org/>

The First Call was distributed in 2021 to committee chairs, Council members, Executive Officers, and all relevant IFAC officials, and an updated call was in progress during the preparation of this *Newsletter* issue. The current meeting schedule can be found on the IFAC website at: <https://www.ifac-control.org/news/ifac-council-meeting-schedule-2022-london>



Travel Information

Accommodation information can be found on the ECC 2022 website at: <https://ecc22.euca-ecc.org/accommodation/>

Please note that in recent months entry requirements for the United Kingdom have changed! Additionally, Covid-19-related requirements

are currently in place for travel in and out of many countries, and the situation will most likely undergo further changes by July 2022, so please keep informed of these developments, check your country's requirements for exit and re-entry, and plan accordingly. You can find England-specific information about Covid-19 and any related regulations at: <https://www.gov.uk/coronavirus>.

Travel information for entering the UK can be found at: <https://www.gov.uk/uk-border-control/before-you-leave-for-the-uk>

Additional information will be uploaded on the IFAC website in the respective password-protected sections and under documents, as well as on the IFAC Cloud. The remote participation access information will be distributed in advance of the meetings. If you have forgotten your password for the IFAC website or encounter any issues in accessing necessary information, please contact the IFAC Secretariat at secretariat@ifac-control.org.

We hope that the situation in July 2022 will allow for many members of the IFAC community to gather in-person in London and be together again with friends and colleagues old and new after two years of online meetings!

7th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control (LHMNC 2021) 11-13 October 2021 Berlin, DE (hybrid)

The 7th IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control (LHMNC 2021) took place from 11-13 October 2021 in a hybrid format with four plenaries at Technische Universität Berlin (DE). 59 papers authored by over 140 authors from 24 countries were presented in twelve sessions, eight of them being invited sessions.

After Princeton/US (2000), Seville/ES (2003), Nagoya/JP (2006), Bertinoro/IT (2012), Lyon/FR (2015) and Valparaíso/CL (2018), we were happy to hold this seventh workshop of the series in the capital of Germany in a hybrid format. Around two-thirds of the 100 participants were able attend in person, which after a long pause due to the Covid-19 pandemic was a great pleasure and allowed fruitful scientific discussions. With the help of the excellent local technical support, the remote participants could join the workshop in both lecture halls and discuss with the speakers or audience present in Berlin.

The main topics of this edition were geometry in mechanics and control for finite- and infinite-dimensional systems, thermodynamic systems, passivity- and dissipativity-based control methods and applications, structure-preserving numerical methods and systems' theory and control of port-Hamiltonian systems. The

four exciting plenaries gave reason for many vibrant discussions:

- Jacquélien Scherpen (University of Groningen, NL): *"Krasovskii Passivity and Control with Applications to Brayton-Moser Systems"*
- Herbert Egger (JKU Linz, AT): *"On the Energy-Based Modelling and Structure-Preserving Approximation of Finite and Infinite Dimensional Dynamical Systems"*
- Stefano Stramigioli (University of Twente, NL): *"Birds, Fluids and Interaction: Trying to Understand Nature with Physical System Theory, Geometry, and Port-Hamiltonian Systems"*
- Oliver Sawodny (University of Stuttgart, DE): *"Model-Based Toolchain for Control of Adaptive Structures and Facades in Civil Engineering"*

On the occasions of the 30th anniversary of the port-Hamiltonian framework and the 60th birthday of Bernhard Maschke, a two-day anniversary workshop was organized directly after LHMNC 2021 at the same place.

Although Covid-19 restrictions made a significant impact on the social program, including the conference dinner, which could not be held on a boat on the Spree River, all participants enjoyed the occasion to meet, discuss and work. Berlin as a vibrant capital provided many possibilities to gather in the evenings with good food and drinks.

Submitted by: Volker Mehrmann (TU Berlin, DE) and Paul Kotyczka (TU Munich, DE), LHMNC 2021 NOC Co-Chairs

19th European Control Conference (ECC 2021) 29 June-2 July 2021 Online

Originally planned to take place in Rotterdam (The Netherlands), the 19th European Control Conference (ECC 2021, and 2nd Virtual ECC) took place between June 29 and July 2 of 2021, once more completely online due to the COVID19 pandemic. Despite some pandemic-related setbacks, the conference was a success with 638 paper submissions, two tutorial sessions, and seven workshop proposals received. After a careful review process, receiving an average of 3,16 reviews per paper, 412 papers were accepted for presentation, and four workshops took finally place in the conference. Additionally, 24 extended abstracts were received, of which 14 were accepted.

The conference was carried on the innovative Virtual Event Platform from Conference Compass, enabling a lively exchange of ideas and the presentation of the latest developments in various areas in the field of Systems and Control. ECC has been organized by the European Union Control Association (EUCA) annually since 2013 (biannually since its origin in 1991

until 2012), except for 2017. ECC is co-sponsored by IFAC and the IEEE Control Systems Society.

The 2021 edition of ECC was hosted by DISC (Dutch Institute of Systems and Control) in cooperation with the Delft University of Technology. Henk Nijmeijer acted as General Chair, Hans Hellendoorn was the National Organizing Committee Chair, Jacquélien Scherpen and Maurice Heemels co-chaired the International Program Committee, and Antonella Ferrara acted as Editorial Board Chair. Further details on the composition of the diverse roles within the organization, and the conference itself can be found at the conference website <https://ecc21.euca-ecc.org/>. The organizing committee initially planned for an in-person conference, while rapidly it became clear this would not be possible and initiated preparations to shift to a hybrid format. Again, the hybrid format plan had to be scrapped as the events of the pandemic unfolded. Finally, thanks to the lessons learned in the previous edition, and the professionalism of the organizing committee and technical help the conference was reshaped in a record time to take place fully online. Unfortunately, this meant that the many participants that had planned to visit the vibrant city of Rotterdam, and the Netherlands, had to stay home. On the bright side, this also meant lower fees and costs to attend, which facilitated the (virtual) attendance to many researchers.

Despite the online nature of the event, we still had a few social (virtual) interaction moments: a welcome ceremony on Tuesday, a get together on Thursday during which the European Control Award (ECA) was announced, and a closing ceremony in which the ECC Best Student Paper Award and the European Systems & Control PhD Thesis Award were announced. The ECA went to Silvère Bonnabel, for his contributions to geometric filtering, the Best Student Paper award had two winners: Thomas Chaffey and Hamed Taghavian, and the Best PhD Thesis award went to Christos K. Verginis.

The top-10 submitting countries (based on corresponding author count) were Germany (97), France (66), The Netherlands (66), Italy (57), USA (50), India (41), UK (27), Sweden (21), Russia (19), and Brazil (19).

The program was organized in 12 tracks on dominant topics. The topics were:

1. Automotive, Traffic, Mobility, Transport, Maritime,
2. Security, Resilience, Fault Diagnosis and Isolation,
3. Linear and Nonlinear Systems, Observers,
4. Learning and Identification,
5. Networked Systems and Distributed Control,
6. MPC and Optimal Control,
7. Robotics, Mechatronics, Autonomous Systems,
8. Hybrid Systems and Distributed Parameter Systems,
9. Biology, Energy and Power,
10. Gametheory, Multi-agent Systems/Control Applications,
11. Adaptive Systems and Control, Signal Processing, Modelling, and
12. Robust Control, Uncertain Systems and Computational Methods.

We had seven excellent plenaries:

- Dragan Netic (University of Melbourne, AU): *“Extremum Seeking Control”*
- Marcel Heertjes (ASML and TU Eindhoven, NL): *“Hybrid Integrator-Gain Systems – Moore is less”*
- Danica Kragic Jensfelt (Royal Institute of Technology, SE): *“Representation Learning for Interaction Tasks”*
- Jan-Willem van Wingerden (TU Delft, NL): *“Closed-loop Dynamic Wind Farm Control”*
- Karen Willcox (University of Texas, Austin, USA): *“Predictive Digital Twins at Scale”*
- Silvère Bonnabel (University of New Calédonia and Mines ParisTech, FR) ECA plenary: *“Geometric Filtering and Autonomous Navigation”*
- Alberto Bemporad (IMT School for Advanced Studies Lucca, IT): *“Machine Learning for MPC”*

The four workshops that finally featured on Tuesday were:

- *Future Automotive Systems: Modeling, Design and Control.* Mauro Salazar, Theo Hofman;
- *Model-based Control of Soft Robots.* Brandon Caasenbrood, Cosimo Della Santina, Alexander Pogromsky;
- *Modeling and Control of Boolean Dynamical Systems.* Carmen Del Vecchio, Amol Yerudkar, Maria Elena Valcher, Luigi Glielmo Modeling; and
- *Control of Power Grids, Where Do We Go From Here?* Francesco Lo Iudice, Pietro De Lellis.

Additionally, two tutorial sessions took place: the first one on *Data-Driven Modeling in Dynamic Networks* organized by Paul Van den Hof, Xiaodong Cheng, Arne Dankers, and Karthik Ramaswamy; and the second one on *Stability and Robust Control of PDEs and Large-Scale Networks*, organized by Andrii Mironchenko, Christophe Prieur; and two special sessions: a lunch session for Women in Control in which younger researchers got an opportunity to mingle and learn from the experience of three female academic leaders on the field: Prof. Karen Willcox (University of Texas at Austin), Prof. Jacquelin Scherpen (University of Groningen), and Prof. Sandra Hirche (Technical University of Munich); and the Mathworks Special Session in which Dr. Ayse Tekes (from Kennesaw State University) gave a talk on *“Teaching Vibrations and Control Labs Online Using Simscape and MATLAB Apps”*.

ECC 2021 would never have been possible without the work of all the members of the community that helped in this difficult process, all the reviewers, members of the editorial board, award committees, and diverse chairs.

Very specially, we would like to acknowledge the tremendous work put in by the Conference Team, and most importantly by the DISC secretary Martha Otte.

Submitted by: Manuel Mazo Jr. (Delft University of Technology) and Henk Nijmeijer (General Chair, Eindhoven University of Technology)

IFAC Executive Officers Meeting 8- 9 April 2022 Austria & Online

The IFAC Executive Officers gathered from 8-9 April 2022 in hybrid format for their usual spring meeting with the aims of discussing urgent issues needing coordination among officers, representation with respect to Austrian and international partners, as well as the preparation of the next IFAC Council and related meetings.

Before the Covid-19 pandemic, IFAC leadership always gathered all in-person once a year in Austria, home of the permanent IFAC Secretariat at the invitation of the Austrian government since 1978. This tradition began during the IFAC presidency of Yoshikazu Sawaragi (JP) in the early 1980s. But even now in a time of virtual meetings many have found that there is simply no replacement for being able to be in the same room and look a colleague in the eyes, versus looking at faces in boxes on a screen. In addition it is a challenge to pick meeting times that work well for participants scattered amongst many time zones.

The officers based in Europe (Dimitri Peaucelle, IFAC Secretary/VP of Operations, Frank Allgöwer/Immediate Past President, John Lygeros, VP of Finances, Maria Prandini, VP of Conferences, and Sarah Spurgeon, VP of Publications) were able to travel to Austria and be together in-person. Due to the pandemic and recent restrictions on international travel it was also the first time that the IFAC Secretary was able to visit and see the Secretariat premises. The officers based outside of Europe (Hajime Asama, IFAC President, Dan Cho, IFAC President-Elect, and Carlos Eduardo Pereira, IFAC VP Technical Board) participated virtually.

The activities kicked off in Vienna on 7 April. The tradition in recent years has been to hold a technical lecture, with the possibility for members of the Austrian control community to attend in-person. This year's lecture was *“Making the Case for Switched Control in Systems Science”* and was given by Sarah Spurgeon (IFAC VP Publications).

Lecture Abstract

Since the topic of sliding mode control was introduced to the international control community following early pioneering work in the former Soviet Union in the 1960's, the methodology has received a great deal of attention across a broad range of application domains. Fundamental to the approach is its total invariance to an important class of parameter variations and uncertainty. A further advantage is that the dynamic behaviour of the system may be directly tailored by the choice of a so-called switching function - essentially this switching function can be thought of as a measure of the desired performance.

This presentation will begin with a review of the basic properties and terminology of such discontinuous controllers. By appealing to highly

conserved and robust controllers from biology, the case for discontinuous control as an underpinning element for robustness in both the control and observation of large scale and complex systems will be made. Results from current applications of interest including the biological domain will be used to demonstrate the significance of the approach.

The environment of the control scientist continues to change rapidly. Coupled with advances in communications, networking, sensing and computing, problems become ever more large scale. This is coupled with an increasing appetite to incorporate data and learning within these systems. The presentation will conclude with some comments on what switched control may have to contribute to this rapidly developing agenda.

In addition online streaming was made available, to allow for participation from abroad as well. Around 70 people signed up and participated to listen to the stream. The lecture was recorded and should soon be available on the IFAC YouTube channel.

7 April concluded with the IFAC Dinner. In addition to the IFAC Executive Officers the dinner (held at Trattoria Martinelli in Vienna's historic first district) was attended by representatives from the Austrian control community, IFIP (which also has its permanent Secretariat in Laxenburg, AT), and many others with a relationship with IFAC.

One highlight of the dinner was being able to personally acknowledge the 15 years of service that Kurt Schlacher provided to the IFAC community as IFAC Secretary (2005-2020). Additionally the attendees were able to congratulate Katharina Willixhofer (IFAC Secretariat staff) on her 7 April birthday.

The meetings began in the morning at the IFAC Secretariat office in Laxenburg on 8 April and continued on 9 April. Topics included preparation of the upcoming IFAC Council- and Related Meetings in London, Publications, Technical Board matters, Conferences, Finances, task force updates, and many more.

Plans are underway for upcoming IFAC Executive Officers' Meetings, including an online session in mid-April to complete a few agenda items, and at the annual IFAC meetings in London in July 2022.

Written by: Elske Haberl (IFAC Secretariat)

The IFAC Conference App is now available!

The App is paid for by IFAC and can be used free of charge by IFAC conference organizers and attendees. Many IFAC conferences are to be included soon!

How to download:

App Store <https://apple.co/3mpaER7>

Google Play <https://bit.ly/3lazFjx>

You can also search for 'IFAC' in the Apple App Store or in the Google Play Store.

Calendar of IFAC Conferences

Title	2022	Place	Further Information
ACA, ICROS, SICE, IFAC et al. Conference on Asian Control Conference (in cooperation with IFAC) ASCC 2022	May 04 – 07	Jeju Island Republic of Korea	http://ascc2021.org/
17 th IFAC Conference on Programmable Devices and Embedded Systems PDES 2022	May 17 – 19	Sarajevo Bosnia and Herzegovina	http://pdes-conference.eu/ dejan.jokic@ibu.edu.ba
8 th International Conference on Control, Decision and Information Technologies CoDIT 2022	May 17-20	Istanbul Turkey	https://codit2022.com/
2 nd IFAC Workshop on Integrated Assessment Modelling for Environmental Systems IAMES 2022	June 01 – 03	Tarbes France	https://iames2022.sciencesconf.org/ francois.peres@enit.fr
11 th IFAC Symposium on Fault Detection, Supervision and Safety for Technical Processes SAFEPROCESS 2022	June 07 – 10	Pafos Cyprus	https://safeprocess2021.eu/
Conference on American Control Conference (in cooperation with IFAC) ACC 2022	June 08 – 10	Atlanta, GA USA	https://acc2022.a2c2.org/
13 th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems DYCOPS 2022	June 14 – 17	Busan Republic of Korea	http://dycops2022.org/ secretariat@dycops2022.org
6 th IFAC Symposium on Telematics Applications TA 2022	June 15 – 17	Nancy France	http://ta22.cran.univ-lorraine.fr/ ta22-contact@univ-lorraine.fr
11 th IFAC Symposium on Control of Power and Energy Systems CPES 2022	June 21 – 23	Online	https://cpes2021.com/ cpes2021@ipu.ru
10 th IFAC Conference on Manufacturing Modelling, Management and Control MIM 2022	June 22 – 24	Nantes France	https://hub.imt-atlantique.fr/mim2022/ contact@mim2022.com
IFAC Workshop on Control for Smart Cities CSC 2022	June 27 – 30	Sozopol Bulgaria	https://csc2022.sai-bg.com/ csc2022bulgaria@gmail.com
14 th IFAC Workshop on Adaptive and Learning Control Systems ALCOS 2022	June/July 29 – 01	Casablanca Morocco	http://www.alcos2022.org/ alcos2022@unicaen.fr
9 th IFAC Conference on Networked Systems NECSYS 2022	July 05 – 07	Zürich Switzerland	https://necsys22.control.ee.ethz.ch/
11 th IFAC Symposium on Intelligent Autonomous Vehicles IAV 2022	July 06 – 08	Prague Czech Republic	https://www.iav2022.eu/ iav2022@guarant.cz
15 th APCA International Conference Automatic Control and Soft Computing CONTROLLO 2022	July 06 – 08	Caparica Portugal	https://controllo2022.deec.fct.unl.pt/ controllo2022@campus.fct.unl.pt
6 th IFAC Conference on Intelligent Control and Automation Sciences ICONS 2022	July 13 – 15	Cluj-Napoca Romania	https://icons2022.utcluj.ro/ icons2022@conference.utcluj.ro
Conference on European Control Conference (in cooperation with IFAC) ECC 2022	July 13 – 15	London United Kingdom	https://ecc22.euca-ecc.org/ ecc22admin@euca-ecc.org
19 th INSTICC, IFAC, et al. International Conference on Informatics in Control, Automation and Robotics (in cooperation with IFAC) ICINCO 2022	July 14 – 16	Lisbon Portugal	https://icinco.scitevents.org/ icinco.secretariat@insticc.org

Calendar of IFAC Conferences

Title	2022	Place	Further Information
18 th IFAC Workshop on Control Applications of Optimization CAO 2022	July 18 – 22	Gif sur Yvette France	https://cao2022.sciencesconf.org/
13 th IFAC Symposium on Advances in Control Education ACE 2022	July 24 – 27	Hamburg Germany	https://ace2022.org/ info@ace2022.org
5 th IFAC Workshop on Advanced Maintenance Engineering, Services and Technologies AMEST 2022	July 26 – 29	Bogotá Colombia	https://amest2022.uniandes.edu.co/ amest@uniandes.edu.co
Vienna International Conference on Mathematical Modelling MATHMOD 2022	July 27 – 29	Vienna Austria	https://www.mathmod.at/ mathmod@acin.tuwien.ac.at
19 th IFAC Symposium on Control, Optimization and Automation in Mining, Mineral 15 – 18 and Metal Processing MMM 2022	August 15 – 18	Montreal Canada	http://ifacmmm2022.org/ ifac-mmm2022@conferium.com
9 th CACHE/IFAC Conference on Foundations of Systems Biology in Engineering FOSBE 2022	August 28 – 31	Boston, MA USA	http://fosbe.org/
10 th IFAC Symposium on Advances in Automotive Control AAC 2022	August 29 – 31	Columbus, OH USA	https://car.osu.edu/AAC2022
10 th IFAC Symposium on Robust Control Design ROCOND 2022	August/Sept. 30 – 02	Kyoto Japan	http://rocond21.ee.t.kyoto-u.ac.jp/index.html rocond2021-secretariat@googlegroups.com
9 th IFAC Symposium on Mechatronic Systems MECHATRONICS 2022	September 6 – 9	Los Angeles, CA USA	https://ifacms-movic2022.seas.ucla.edu/home/
4 th IFAC Workshop on Control of Systems Governed by Partial Differential Equations CPDE 2022	September 7 – 9	Kiel Germany	https://cpde2022.org/ noc@cpde2022.org
16 th IFAC Workshop on Discrete Event Systems WODES 2022	September 7 – 9	Prague Czech Republic	https://wodes2022.math.cas.cz/
15 th IFAC Symposium on Analysis Design and Evaluation of Human Machine Systems HMS 2022	September 12 – 16	San Jose, CA USA	https://www.ifac-hms2022.org/ ifac.hms.2022@gmail.com
25 th International Symposium on Mathematical Theory of Networks and Systems (in cooperation with IFAC)	September 12 – 16	Bayreuth Germany	https://www.mtns2022.uni-bayreuth.de mtns2022@uni-bayreuth.de
7 th IFAC Conference on Sensing, Control and Automation Technologies for Agriculture AGRICONTROL 2022	September 14 – 16	Munich Germany	https://www.events.tum.de/frontend/index.php?folder_id=1147 ertug.olcay@tum.de
14 th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles CAMS 2022	September 14 – 16	Kgs. Lyngby Denmark	https://www.ifac-cams2022.dk/
2 nd IFAC Workshop on Control Methods for Water Resource Systems CMWRS 2022	September 22 – 23	Milan Italy	https://cmwrs2022.deib.polimi.it/ cmwrs2022@polimi.it

The IFAC Calendar of Conferences is constantly updated as additional technical events (Workshops, Symposia, and Conferences) are approved. Due to the Covid-19 pandemic some conferences have had date changes, format changes, cancellations, etc. since their initial approval. Please check back often for the current status. The complete version of the IFAC Calendar of Conferences is available online at:

https://www.ifac-control.org/conferences/@@conference_view

Calendar of IFAC Conferences

Title	2022	Place	Further Information
8 th IFAC Symposium on System Structure and Control (held jointly) SSSC 2022	September 27 – 30	Montreal Canada	https://sssc2022.encs.concordia.ca/
17 th IFAC Workshop on Time Delay Systems (held jointly) TDS 2022	September 27 – 30	Montreal Canada	https://sssc2022.encs.concordia.ca/
5 th IFAC Workshop on Linear Parameter Varying Systems (held jointly) LPVS 2022	September 27 – 30	Montreal Canada	https://sssc2022.encs.concordia.ca/
2 nd AACC Conference on Modeling, Estimation and Control Conference MECC 2022	October 1 – 5	Jersey City, NJ USA	https://mecc2022.a2c2.org/
13 th IFAC Symposium on Robot Control SYROCO 2022	October 17 – 20	Matsumoto Japan	https://syroco2021.com/
16 th International Workshop on Enterprise Integration, Interoperability and Networking EI2N 2022	October 25	Valletta Malta	https://in4pl.scitevents.org/EI2N.aspx in4pl.secretariat@insticc.org
21 st IFAC Conference on Technology, Culture and International Stability TECIS 2022	October 26 – 28	Prishtina Republic of Kosovo	http://tecis2022.ubt-uni.net/ tecis2022@ubt-uni.net
16 th European Workshop on European Advanced Control and Diagnosis ACD 2022	November 16 – 18	Nancy France	https://acd2022.cran.univ-lorraine.fr/ acd2022-contact@univ-lorraine.fr
22 nd IFAC Symposium on Automatic Control in Aerospace ACA 2022	November 21 – 25	Mumbai India	https://aca2022.com/ contact.aca2022@aero.iitb.ac.in
1 st IFAC Workshop on Control of Complex Systems COSY 2022	November 24 – 25	Bologna Italy	https://eventi.unibo.it/cosy2022 cosy2022@unibo.it
NCACI, IFAC et al. Conference on Australian and New Zealand Control Conference ANZCC 2022	November 24 – 25	Gold Coast Australia	https://anzcc.org.au/ANZCC2022
4 th IFAC Workshop on Cyber-Physical and Human Systems CPHS 2022	December 1 – 2	Houston, TX USA	http://not yet available
Title	2023	Place	Further Information
12 th IFAC Symposium on Nonlinear Control Systems NOLCOS 2022	January 4 – 6	Canberra Australia	https://nolcos2022.com/ contact@nolcos2022.com
Conference on American Control Conference (in cooperation with IFAC) ACC 2023	May/June 31 – 02	San Diego, CA USA	https://acc2023.a2c2.org/
22 nd IFAC World Congress 2023	July 09 – 14	Yokohama Japan	https://www.ifac2023.org/

Impressum:

Medieninhaber und Herausgeber:
International Federation of Automatic Control (IFAC), Zurich
Schlossplatz 12, 2361 Laxenburg, Austria

Verlagsort und Redaktion:
Dr. Dimitri Peaucelle,
Schlossplatz 12, 2361 Laxenburg
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Editor: Dimitri Peaucelle
Layout: Elske Haber
published bimonthly

Das Sekretariat der IFAC befindet sich seit 1978 aufgrund eines Übereinkommens mit der Österreichischen Bundesregierung und mit der Österreichischen Akademie der Wissenschaften in Laxenburg und wird derzeit aus Mitteln des Bundesministeriums für Klimaschutz, Umwelt, Energie, Mobilität, Innovation und Technologie „BMK“ gefördert.

 Bundesministerium
Klimaschutz, Umwelt,
Energie, Mobilität,
Innovation und Technologie