

## Recent IFAC Technical Event Reports

### Embedded Systems, Computational Intelligence and Telematics in Control (3<sup>rd</sup> CESCIT 2018) 6-8 June 2018 Faro, Portugal

Following the successful previous events in Würzburg, Germany in 2012 and Maribor, Slovenia in 2015, the 3<sup>rd</sup> IFAC Conference on Embedded Systems, Computational Intelligence and Telematics in Control – CESCIT 2018 – was held at the University of Algarve in Faro, Portugal from 6-8 June 2018.

CESCIT is a triennial conference co-locating all events of the IFAC Coordinating Committee on Computers, Cognition and Communication in Control (CC 3) scheduled to occur in the year following the IFAC World Congress. It addresses interdisciplinary scientific aspects related to interaction between control, computers and software. CESCIT 2018 was sponsored by the Technical Committees for Computers for Control (3.1), Computational Intelligence in Control (3.2) and Telematics: Control via Communication Networks (3.3). It was also co-sponsored by the TCs on Modelling, Identification and Signal Processing (1.1), Adaptive and Learning Systems (1.2), Discrete Event and Hybrid Systems (1.3), Control Design (2.1), Linear Control Systems (2.2), Robust Control (2.5), Robotics (4.3), Human Machine Systems (4.5), Automotive Control (7.1), Aerospace (7.3) and Intelligent Autonomous Vehicles (7.5).



Left to right: António Ruano (CESCIT chair, PT), Saul Neves de Jesus (Vice-Rector at Univ of Algarve, PT) & Carlos Eduardo Pereira (IFAC Technical Board Vice-Chair, BR)

The IFAC CESCIT 2018 International Program Committee has done a wonderful job in reviewing the papers and setting up the Technical Program. We

would like to thank the effort of the IPC Co-Chairs, Brigit Vogel-Heuser (DE), Thierry-Marie Guerra (FR) and Ulrich Jumar (DE), and Industrial Chair Serge Boverie (FR), as well as the IPC members for their revision work.

The Technical Program consisted of four invited sessions, four plenary lectures and four regular sessions. Plenary lectures were:

- *AI Planning for Nonlinear Optimal Control: Application to Switched Systems*, Lucian Busoni (RO)
- *Accurate and Reliable System State Estimation for Automated Vehicles Using Galileo*, René Zweigel (DE)
- *Partitioned-Control-Systems*, Alfons Crespo (ES)
- *Time Based Computation with Pulse Trains*, Jose C. Principe (US)

The social program was designed to give a glance of old Faro and the Algarve's gastronomy, and to explore the beauty of the River Formosa.

The invited sessions covered leading control topics: Smart Home and Buildings Management and Control, Wireless Communication in Industrial Automation, Fuzzy-inspired convex analysis and control of nonlinear systems and Smart Control in Industry. .

To stimulate the involvement of young scientists and engineers in IFAC, as well as to recognize top-level contributions of the younger generation in our field, CESCIT has an IFAC Young Author Award. Four finalists were selected by the jury. Three have received honorable mentions, and the award certificate and the monetary prize was delivered to Doriane Petit, for the paper entitled *A Strategy to Implement a Software Defined Networking Controller in a Space Launcher*.

Without the help of a number of individuals and Institutions this event would never be possible. A special word of thanks are extended to Lina Lopes, and her staff from Untapped Events. We would also acknowledge the support of Algarve Technologic Research Centre, University of Algarve and its Faculty of Science & Technology, Portuguese Association of Automatic Control, Fundação para a Ciência e Tecnologia, Região de Turismo do Algarve, Grupo Rolar, Visualforma, CRESC Algarve 2020, Portugal2020 and also Fundo Europeu de Desenvolvimento Regional.

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### 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>

We believe that the beautiful environment of Algarve supported and inspired scientific exchanges and the cooperation between the international participants in this future oriented field.

Submitted by:

António Ruano (CESCIT chair, PT), Klaus Schilling (IPC chair and CC 3 chair, DE), M. Graca Ruano (Editor, PT)

## Discrete Event Systems (14<sup>th</sup> WODES 2018) 31 May - 1 June 2018 Sorrento Coast, Italy

The 14<sup>th</sup> International Workshop on Discrete Event Systems (WODES 2018) was held from May 30– June 1, 2018, at the Towers Hotel Stabiae Sorrento Coast, located on the Sorrento Coast in Italy.

The aim of WODES is to join researchers interested in the Discrete Event Systems (DESs) field from all over the world to exchange information about their activities on formalisms, methodologies, tools and applications.

The Workshop series started in Prague in 1992. Since then, the following thirteen previous workshops were held every two years: Antibes (1994), Edinburgh (1996), Cagliari (1998), Ghent (2000), Zaragoza (2002), Reims (2004), Ann Arbor, Michigan (2006), Goteborg (2008), Berlin (2010), Guadalajara (2012), Cachan (2014), and Xi'an (2016). Twenty years after the event held in Cagliari, WODES 2018 is the second one in the series to be held in Italy.

A logo inspired by the view of Naples from the Sorrento Coast was designed for WODES 2018. A call was issued for the logo design, and the winner was Andrea Albinni. The volcano Vesuvio, the sun and the sea are represented in the logo.

WODES 2018 (see <http://wodes2018.unisa.it/>) was sponsored by IFAC, the International Federation of Automatic Control, and was co-sponsored by IEEE Control Systems Society and by IEEE Italy Section, Italian Chapter IEEE Robotics and Automation, Italian Chapter IEEE Control Systems. It was locally organized by the Automatic Control Group of the Dipartimento di Ingegneria dell'informazione ed elettrica e Matematica applicata di Salerno University (IT).

For the first time in WODES history, the workshop was preceded by the 1<sup>st</sup> International school on Discrete Event Systems (<http://schooldes2018.unisa.it/>). The goal of this three day pre-conference event was to introduce the relevant areas and formalisms of DES (control, modeling, diagnosis, optimization, Petri nets, automata) in a series of two-hour lectures. The event was a challenge, but turned out to be a success with 44 registrations from all over the world (29 attendees from Europe, 6 from China, 4 from USA & Canada, 3 from Brazil, 1 from Tunisia, 1 from Singapore).

## Technical Program

WODES 2018 received 106 submissions, and each submission was peer reviewed by three reviewers. Among all submissions, 76 papers were accepted and included in the proceedings that will be published in the open access IFAC-PapersOnLine series hosted on ScienceDirect (<https://www.sciencedirect.com/>). More than 130 people attended the opening session in the morning of May 30.

The corresponding authors of the 76 accepted papers came from 18 countries, with the following distribution: 46 papers came from Europe (which represents about the 60.5% of the total), ten from Latin America, ten from Asia, seven from US/Canada, two from Oceania, and one from Africa.

The program included three excellent plenary talks. Indeed, the workshop opened on Wednesday 30 May 2018 with the talk titled "The Science of Software and System Design", by Prof. Stavros Tripakis (FI/US). On May 31, Prof. Spyros Reveliotis (US) gave his talk titled "Logical Control of Complex Resource Allocation Systems". Finally, Prof. Carla Seatzu (IT) gave her plenary talk titled "Partially Observed Discrete-Event Systems: From State Estimation To Intrusion Detection".



Left to right: WODES 2018 Best Student Paper Award winner Yingying Liu (CN), with Jean-Jacques Lesage (FR)

In addition to these plenary speeches, there were 71 oral presentations in nine regular and five invited sessions. All the papers in the special sessions went through the normal review process.

## Organisers and topics were:

- Kai Cai (JP) and Eric Rutten (FR), "Applications of Discrete-Event Systems" (I & II)
- Jan Komeda (CZ), "(Max, +)-Algebra and Quantitative Issues in Discrete Event Systems"
- Dimitri Lefebvre (FR), Pascal Marange (FR), and Gonzalo Mejia (CL), "Modelling and Control with Discrete Event Systems for Scheduling Problems"
- Maria Pia Fanti (IT) and Agostino Marcello Mangini (IT), "Observability, Opacity and Liveness in Discrete Event Systems"

For the first time, a demonstrator session was organized to provide an opportunity to promote research or educational-oriented devices, innovative prototypes and attractive transfer of technologies towards high-tech enterprise. The session, organized by Prof. Maria Grazia Dotoli (IT) and Christian Mahulea (ES), received five contributions.

## From the IFAC President

Dear Friends and Colleagues,

I am regularly surprised and impressed to discover the diverse talents of the many researchers and engineers beyond their deep knowledge in the systems and control field. Did you know, for example, that Bob Bitmead, the Editor in Chief of the *IFAC Journal of Systems and Control*, is a passionate player of Australian Football? Or did you suspect that former IFAC president Ian Craig performs in concerts as a cellist? I am very excited to bring some of those talents on stage at the IFAC 2020 World Congress. But I am not talking about Australian Rules Football or about kickboxing, sorry Bob. I am talking about initiating the world's first control orchestra".

How can this possibly work? The idea is to bring together passionate musicians among the World Congress participants, practice on site during the IFAC World Congress and then perform live for all the Congress attendees. For this unique event, we are looking for interested researchers in the field of automatic control with some previous musical experience. So, if Mozart, pianissimo or musical scale rings a bell, or you're simply curious about this world's first control orchestra, then sign up to receive further information over the next months and stay 'tuned' with no strings attached via <https://www.ifac2020.org/events> and stay 'tuned' with no strings attached!

As you can see from this control orchestra plans, the preparations for the next World Congress are already well on their way for this main IFAC event taking place July 12 to 17, 2020 in Berlin, Germany. The conference venue and the location for the conference banquet (real Berlin style) have already been arranged and plans for the technical program with various special submissions have been established. There will be oral, interactive, and demonstrator contributions as well as video submission, to say the least. Even the submission deadline is already fixed: Draft Manuscript Submission Deadline is October 31st, 2019. If you're interested in the first Call for Papers, how the preparations for the World Congress are progressing, what other interesting and creative non-scientific program elements will be introduced or simply forgot which date to block in your calendar, you can always visit <https://www.ifac2020.org/> to stay up-to-date.

With all the preparations going well, I am confident that the Berlin World Congress will be a memorable event and I am looking forward to welcoming you in 2020 to Germany's exciting capital city already now. Berlin is unique and very different to many other European capital cities. Some say that the best part of Berlin is that it is not perfect but ever-changing, bursting with culture, history, creativity and unconventional solutions.

So, I encourage you to study the Call for Papers, think about interesting research to present and, possibly, dust off your instruments! In the name of the whole organizing team I want to wholeheartedly invite you to the IFAC 2020 World Congress and I think we can all look forward to this congress of high scientific level with many special program elements, on and off topic.

Best wishes from Stuttgart  
Frank Allgöwer

\*at least as far as we know. Otherwise, we will simply try to be the biggest, or the best -;



### Awards and Social Program

The Best Student Paper Award, which was established at WODES 2012, recognizes excellence in a WODES conference paper whose primary author is a student. The award committee, chaired by Prof. Jean-Jacques Lesage (FR), selected five finalists, and the winner of the WODES 2018 Best Student Paper Award was Yingying Liu (CN) for the paper "On Scalable Supervisory Control of Multi-Agent Discrete-Event Systems".

An interesting social program was offered to participants. In addition to the welcome reception, a walking visit to the beautiful town of Sorrento, and a guided tour to Pompeii's ruins, the conference organized a gala dinner on the last evening in a fine restaurant in Vico Equense, a beautiful town on the Sorrento Coast.

### Concluding Remarks

During the closing ceremony Prof. Joerg Raisch (DE), incumbent chair of the WODES steering committee, introduced his successor Prof. Antonio Ramirez Trevino (MX), who announced the future conference plans. We wish ever-increasing success to all future WODES events. There were six members of Salerno University working in the local organization and two volunteers. We would like to give a big thanks to all of them for the organization of an enjoyable and successful workshop.

Submitted by: Francesco Basile (General Chair, WODES 2018, IT), Chris Hadjicostis (CY), Jan Komenda (CZ), Program Committee Co-chairs, WODES 2018

## Programmable Devices and Embedded Systems (15<sup>th</sup> PDES 2018) 23-25 May 2018 Ostrava, Czech Republic

Programmable Devices and Embedded Systems, PDES 2018 was held in Ostrava, Czech Republic, from May 23-25, 2018. The main topic of this conference was using programmable embedded systems for industrial applications, new standards, innovative solutions and following scientific work. New topics were included such as Modern Concepts for Control Systems as Cyberphysical Systems, Biologically Inspired Systems or Embedded Systems Security, which is a very often discussed phenomenon.

The conference received 142 papers from 17 countries. To evaluate each submission, a double review as minimum was performed by the program committee. After this selection process there were 54 contributions chosen for oral presentations and 32 for poster session (51 papers were rejected and five withdrawn from program due to time constraints on the authors). The overall acceptance ration was about 60%.

The invited session began the program with very interesting speech given by Miroslav Iwachow (IBM) regarding "IBM Architecture for Industry 4.0 and IIoT (Industrial Internet of Things)" and Vladimir Sulc (IQRF Tech) with a presentation about "IQRF -Simply Connecting Things to IoT Through Wireless Mesh Networks". The exact number of visitors is unknown due to the free registration for students who visited the conference program on all days but the minimum number was 120. All participants visited the conference program with the mentioned invited session, ten oral sessions and one poster session. A limited number of participants visited Dolni Oblast Vitkovice (revitalized heavy industrial zone for sport/art/relax activities) as a part of the social program and cultural program including a children's brass orchestra performance (Porubsti trubaci), a one man guitar show (Martin Dytko) and brush artist Vaclav Sipos with a caricature corner.



Visit to Dolni Oblast Vitkovice (revitalized heavy industrial zone) at PDES 2018

At the closing session, the conference acknowledged two excellent papers, first as "Young Student Paper Award" to Radana Kahankova (CZ) and colleagues for the oral presentation of the paper "Least Mean Squares Adaptive Algorithms Optimization for Fetal Phonocardiogram Extraction" and Dejan Jokic (BH) and colleagues for the poster "Implementation and Analysis of Methods for Error Detection and Correction on FPGA".

Organising committee representatives decided to prepare a new PDES issue in Slovakia with a main organiser from the Slovak University of Technology in Bratislava.

Submitted by Zdenek Slanina,  
VSB-TU Ostrava, Czech Republic

## Control in Transportation Systems (15<sup>th</sup> CTS 2018) 6-8 June 2018 Savona, Italy

The 15<sup>th</sup> IFAC Symposium on Control in Transportation Systems (CTS 2018) was held in Savona University Campus, Italy, on June 6-8 2018. The Symposium was organized by the Department of Informatics, Bioengineering, Robotics and Systems Engineering of the University of Genova in Italy. It was sponsored by the IFAC Technical Committee TC 7.4 (Transportation Systems) and co-sponsored by the IFAC Technical Committees TC 7.1 (Automotive Control), TC 7.2 on Marine Systems, TC

7.3 on Aerospace and TC 7.5 on Intelligent Autonomous Vehicles. The Symposium also received financial grants and organizational support from local companies and industries.

The National Organizing Committee was chaired by Prof. Simona Saccone and Prof. Silvia Siri from the University of Genova, Italy, while Dr. Nadia Mazzino from Ansaldo STS Hitachi Group acted as Vice Chair from Industry. The IPC Chair was Prof. Bart De Schutter from the Technical University of Delft, The Netherlands and the Symposium Editor was Prof. Antonella Ferrara from the University of Pavia, Italy.

The Symposium received 114 initial submissions, of which 78 papers were ultimately selected for presentation. The papers were handled by 71 IPC members from 24 different countries, counting on the activity of 60 Associate Editors and 215 reviewers.

The Symposium main scope was that of gathering together the academic and industrial communities spurring them to investigate new ideas, to share innovative solutions, and to discuss future research directions for the analysis, supervision and management of transportation systems. The continuous technological development of vehicles and infrastructures, as well as the increasing mobility demand for both passengers and freight, yield new challenges for researchers and practitioners to manage and control transportation systems in an efficient, synchronized and integrated way. The interactions of intelligent transportation networks with the environment and citizens' daily life also require the design of safe and sustainable mobility systems. The scientific contributions in the program of CTS 2018 followed these lines by providing innovative approaches and solutions for the development of smart transportation systems.

In order to bring significant attention to the several kinds of transportation systems and to the most relevant and innovative research topics, eight Special Tracks were organized and included in the program. These tracks were led by experienced scientists that acted as Track Editors and guided the review process.

The Symposium was attended by 100 participants from 26 different countries, 13% of attendees coming from industry, 45% of participants being students. The program featured 17 technical sessions, six of which were invited sessions, and four plenary invited presentations by experts in the field from industry and academia:

- Stefano Cangelosi (PSA Voltri Prà, Italy), "PSA VOLTRI-PRA': The Automation Journey"
- Carlos Canudas de Wit (GIPSA-Lab, Grenoble, France), "Optimal Traffic Control: Eco-Driving, Green-Waves, and Traffic Lights"

The IFAC Story E-book is available!

<https://www.ifac-control.org/about/the-ifac-story>

- Christos Cassandras (Boston University, USA), "The Internet of Cars"
- Markos Papageorgiou (Technical University of Crete, Greece), "Motorway Traffic Flow Modelling, Estimation and Control With VACS (Vehicle Automation and Communications Systems)"

On the last day of the symposium a technical tour including a visit to the port of Genova was organized in collaboration with the Port Authority of the Western Liguria Region.

The IFAC Young Author Award received ten nominations, with selected finalists: Zlatan Ajanovic (Virtual Vehicle Research Center, Graz, Austria), Nicolas Laurent-Brouty (Université Côte d'Azur, Inria, CNRS, LJAD, France), Sebastiaan van Aalst (Flanders Make, Belgium). The winner was Zlatan Ajanovic (AT) with the paper "A Novel Model-Based Heuristic For Energy-Optimal Motion Planning For Automated Driving" by Z. Ajanovic, M. Stolz, M. Horn.



Left to right: Simona Sacone, Silvia Siri, & Cecilia Pasquale (University of Genova, IT)

The organization of all the activities of the Symposium was set up to create as many as possible pleasant moments for the attendees to spend together, in order to foster scientific and human exchanges, to strengthen collaborative relationships and to create new ones, in the wake of the tradition of the previous CTS symposia.

Submitted by: Simona Sacone and Silvia Siri (University of Genova, IT)

## Control in Offshore Oil and Gas Production (3<sup>rd</sup> OOGP 2018) 30 May - 1 June 2018 Esbjerg, Denmark

The 3<sup>rd</sup> IFAC Workshop on Automatic Control in Offshore Oil and Gas Production (OOGP-2018) was held at Aalborg University, Esbjerg Campus in Esbjerg, Denmark, from May 30-June 01, 2018. OOGP 2018 was sponsored by the IFAC Technical Committee on Chemical Process Control (TC 6.1) and co-sponsored by IFAC TC 4.3 (Robotics), ABB, IDA, DHRTC, DAU, Inspiring Denmark and OFFSHOREENERGY.DK. OOGP 2018 offered a forum for both academia and industries correlated with offshore oil & gas E&P, with special focus on the development and application of control, auto-

mation, measuring, robotics and optimization technologies in offshore oil & gas E&P.

In the 3<sup>rd</sup> IFAC OOGP 2018, Prof. Sigurd Skogestad (NTNU, NO) served as the IPC chair, Mr. Jens Peter Stigkær (Total (formerly Maersk Oil)) the vice-chair from industry, Prof. Zhenyu Yang (AAU, DK) the NOC chair, and John Bagterp Jørgensen (DTU, DK) the co-chair. 51 initial submissions including 47 contributed papers, three plenary papers and one invited session from eleven countries were received, and finally 44 papers including 41 contributed papers and three plenary papers were accepted. These accepted papers covered the research topics of production optimization, drilling automation, reservoir simulation and management, plant-wide and advanced control, robot technology and big data analytics. In total 70 participants attended the workshop including fourteen participants from industry.



Visit of the OOGP 2018 participants to the sculpture "Man Meets the Sea" in Esbjerg, DK

Three plenary talks from both industry and academia were presented:

- Dr. Elvira Marie (Statoil, NO): *Increased Production With Automatic Control In Offshore Oil and Gas Production in Statoil.*
- Dr. Olav Slupphaug (ABB, NO): *Upstream Process Performance: Non-Intrusive Capture Of Large But Hidden Opportunities.*
- Prof. John Bagterp Jørgensen (DTU, DK): *Optimal and Predictive Control In the Upstream Oil and Gas Industry.*

On the evening of 30 May a sightseeing tour was arranged for participants to have a look at the development of Esbjerg concerning the energy industry. During the banquet on 31 May, the Best Conference Paper Award sponsored by AAU and IDA, and the Best Student Conference Paper Award sponsored by ABB, were both announced and presented. Moreover, Prof. Eduardo Gildin from Texas A&M University (US) made a presentation via Skype to express interest in holding the 4<sup>th</sup> IFAC OOGP in 2021 in Texas, USA.

Submitted by: Zhenyu Yang (Aalborg University, DK)

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## Who's Who In IFAC

### Publications Committee Chair

**Ian K. Craig** (ZA) received the B.Eng. degree in electronic engineering from the University of Pretoria (ZA), the S.M. degree from the Massachusetts Institute of Technology (US), and the Ph.D and M.B.A. degrees from the University of the Witwatersrand (ZA). He heads the control systems group in the Department of Electrical, Electronic and Computer Engineering at the University of Pretoria. Previously he was part of the Measurement Control Division of Mintek where he was involved in the design, implementation and commercialisation of advanced controllers for the mineral processing industry. His research interests include model-based control and optimisation in the process industries, as well as the modelling and control of infectious diseases.

I. K. Craig was Editor-in-Chief of the IFAC Journal *Control Engineering Practice* from 2005-2010 and President of the International Federation of Automatic Control (IFAC) from 2011-2014. He was appointed as an IFAC Advisor in 2017, received the IFAC Outstanding Service Award in 2008, was elected Fellow of the South African Academy of Engineering in 2006, received the 2014 President's Award from the South African Institute of Electrical Engineers (SAIEE), and has twice received the exceptional academic achiever award from the University of Pretoria. Ian K. Craig has presented plenary addresses at a number of international conferences and has been a member of over 40 international programme committees, including as chair.



He is the current Chair of the IFAC Publications Committee. The Publications Committee regulates and controls all IFAC publications in accordance with guidelines laid down by the IFAC Council and authorizes expenditure on publications within strict budgetary limits approved by the Council. It submits a report on its work to the Executive Board each year.

I. K. Craig is also the chair of the IFAC Foundation Board of Trustees. The Foundation was created to foster the scientific and social goals of the International Federation of Automatic Control. The IFAC Foundation solicits and funds innovative control engineering activities which promise to improve the state of knowledge of individuals and groups. An important role of the IFAC Foundation is to offer support to the control communities in developing countries.

I. K. Craig is a keen amateur cellist and was the leader of the cello sections of a number of orchestras including the Massachusetts Institute of Technology Symphony Orchestra in



Boston (US) and the Akademisches Symphonie Orchester in Vienna (AT). He regularly performs in chamber music concerts in the Pretoria area.

### Technical Board Member (Social Media Liaison) & Publications Committee (Permanent Guest)

**Linda Bushnell** (US) is a Research Professor in the Electrical Engineering Department of the University of Washington (US). She received her Ph.D. in EE from University of California- Berkeley in 1994 (US), her M.A. in Mathematics from UC Berkeley in 1989, her M.S. in EE from University of Connecticut in 1987 (US), and her B.S. in EE from University of Connecticut in 1985. She also received her MBA from the University of Washington Foster School of Business in 2010.



L. Bushnell's research interests include networked control systems and secure-control. She is a recipient of the US Army Superior Civilian Service Award, NSF ADVANCE Fellowship, and IEEE Control Systems Society Distinguished Member Award. She was elected a Fellow of the IEEE in 2017 for her contributions to networked control systems.

In addition to serving as an Ordinary Member of the Technical Board for the International Federation of Automatic Control (IFAC) for the 2017-2020 triennium and as a Permanent Guest of Publications Committee in her role as social media editor L. Bushnell has been a member of the IEEE since 1985, a member of the IEEE CSS since 1990, and a member of the IEEE Women in Engineering since 2013. For IEEE CSS, she is currently a Distinguished Lecturer, Chair of the Women in Control Standing Committee, and Liaison to IEEE Women in Engineering.

Additionally she is also Technical Program Chair for GameSec 2018, Technical Program Chair for ICCPS 2019, Treasurer of the American Automatic Control Council (AACC, the US IFAC National Member Organization), Associate Editor for *Automatica*, and Series Editor for the Springer textbook series on *Advanced Textbooks in Control and Signal Processing*.

### IFAC Council Member

**Dawn M. Tilbury** (US) received the B.S. degree in Electrical Engineering, summa cum laude, from the University of Minnesota (US) in 1989, and the M.S. and Ph.D. degrees in Electrical Engineering and Computer Sciences from the University of California, Berkeley (US), in 1992 and 1994, respectively.

In 1995, D.M. Tilbury joined the Mechanical Engineering Department at the University of Michigan, Ann Arbor (US), where she is currently Professor, with a joint appointment as Professor of EECS. Her research interests lie broadly in the area of control systems, including applications to robotics and manufacturing systems. In June of 2017, she became the Assistant Director for Engineering at the National Science Foundation (US), while maintaining her position at the University of Michigan. She has published more than 150 articles in refereed journals and conference proceedings. She was elected Fellow of the IEEE in 2008 and Fellow of the ASME in 2012, and is a Life Member of SWE.

D.M. Tilbury won the EDUCOM Medal (jointly with Professor William Messner) for her work on the web-based *Control Tutorials for Matlab*. An updated version was recently re-issued at <http://ctms.engin.umich.edu>. She is co-author (with Joseph Hellerstein, Yixin Diao, and Sujay Parekh) of the textbook *Feedback Control of Computing Systems*. She received an NSF CAREER award in 1999, and is the 2001 recipient of the Donald P. Eckman Award of the American Automatic Control Council. She is the 2012 recipient of the SWE Distinguished Engineering Educator Award, the 2014 recipient of the Michael J. Rabins Leadership Award from the ASME Dynamic Systems and Control Division, the 2016 recipient of the Gold award from the Engineering Society of Detroit, and a 2017 winner of a Harold Johnson Diversity Service Award from the University of Michigan.



D.M. Tilbury was a member of the 2004-2005 class of the Defense Science Study Group (DSSG), and was a member of DARPA's Information Science and Technology Study Group (ISAT) from 2005-2008. She has spent sabbatical leaves at the Institute for Industrial Technologies and Automation (ITIA-CNR) in Milan (IT) and the Department of Automatic Control in Lund (SE). At the University of Michigan, she has taught courses in dynamic systems modeling, automatic control, robot kinematics and dynamics, and linear systems theory, and has advised more than 20 PhD students.

She was a member of the IEEE Control Systems Society Board of Governors from 2005-2008 and again from 2014-2016, and was a member of the ASME Dynamic Systems and Control Division Executive Committee from 2008-2013 (and was Chair of the Division from 2011-2012). She was Associate Editor of the IEEE Transactions on Automation Science and Engineering from 2008-2011, and has been a Senior Editor since 2012. She was Program Chair for the 2012 American Control Conference and General Chair for the 2014 ACC.

In IFAC D. Tilbury was the Chair of the Policy Committee for the International Federation of Automatic Control (IFAC) during the 2014-2017 triennium, and is currently an ordinary member of the IFAC Council for the 2017-2020 triennium.

### IFAC Council Member

**Huijun Gao** (CN) received his Ph.D. degree in control science and engineering from Harbin Institute of Technology, China. He carried out his postdoctoral research with the Department of Electrical and Computer Engineering, University of Alberta, Canada. Since 2004, he has been with Harbin Institute of Technology, where he is currently a Full Professor, the Dean of School of Science, and the Director of the Research Institute of Intelligent Control and Systems.



H. Gao's research interests include network-based control, robust control/filtering theory, mechatronics, robotics, and their engineering applications. He is an IEEE Fellow and received the IES David Irwin Early Career Award.

He is Co-Editor-in-Chief of IEEE Transactions on Industrial Electronics and Associate Editor of Automatica, IEEE Transactions on Control Systems Technology, IEEE Transactions on Cybernetics, IEEE/ASME Transactions on Mechatronics etc. Prof. Gao is an IEEE Industrial Electronics Society (IES) Administration Committee (AdCom) member, and a Ordinary Member of the IFAC Council for the 2017-2020 triennium.

Editor's Note: The full roster of IFAC officials is available at: <https://www.ifac-control.org/structure/list-of-officials>

## IFAC Council & Related Meetings 2018 Final Reminder

The 2018 IFAC Council & Related Meetings will take place from 1-3 September in Florianópolis, Brazil, in conjunction with ROCOND (9<sup>th</sup> IFAC Symposium on Robust Control Design) and LPVS (2<sup>nd</sup> IFAC Workshop on Linear Parameter Varying Systems).

Attendees should please check if you have access to your meeting materials (including the meeting schedule), as paper copies will not be provided/distributed on site. For issues with the IFAC website concerning usernames and/or passwords please contact the IFAC Secretariat ASAP for further assistance.

Travel and visa information is available at: <http://rocond18.ufsc.br/Travel.html>

# Calendar of IFAC Events

Title	2018	Place	Further information
6th IFAC Conference on Nonlinear Model Predictive Control NMPC 2018	August 19 – 22	Madison, WI USA	<a href="http://www.nmpc2018.org/">http://www.nmpc2018.org/</a> <a href="mailto:nmpc@nmpc2018.org">nmpc@nmpc2018.org</a>
5th IFAC Workshop on Mining, Mineral and Metal Processing MMM 2018	August 23 – 25	Shanghai China	<a href="http://ifac-mmm.csu.edu.cn/">http://ifac-mmm.csu.edu.cn/</a> <a href="mailto:ifacmmm2018@csu.edu.cn">ifacmmm2018@csu.edu.cn</a>
12th IFAC, IEEE RAS Symposium on Robot Control SYROCO 2018	August 27 – 30	Budapest Hungary	<a href="http://syroco2018.org/">http://syroco2018.org/</a> <a href="mailto:secretariat@syroco2018.org">secretariat@syroco2018.org</a>
7th IFAC Workshop on Distributed Estimation and Control in Networked Systems NECSYS 2018	August 27 – 28	Groningen Netherlands	<a href="https://fwn06.housing.rug.nl/necsys2018/necsys18@rug.nl">https://fwn06.housing.rug.nl/necsys2018/necsys18@rug.nl</a>
10th IFAC/Polish Academy of Sciences Symposium on Fault Detection, Supervision and Safety for Technical Processes SAFEPROCESS 2018	August 29 – 31	Warsaw Poland	<a href="http://safeprocess18.uz.zgora.pl/">http://safeprocess18.uz.zgora.pl/</a> <a href="mailto:safeprocess18@uz.zgora.pl">safeprocess18@uz.zgora.pl</a>
9th IFAC/IEEE CSS Symposium on Robust Control Design ROCOND 2018	September 03 – 05	Florianópolis Brazil	<a href="http://rocond18.ufsc.br/">http://rocond18.ufsc.br/</a> <a href="mailto:rocond18@gmail.com">rocond18@gmail.com</a>
2nd IFAC/IEEE CSS Workshop on Linear Parameter Varying Systems LPVS 2018	September 03 – 05	Florianópolis Brazil	<a href="http://lpvs18.ufsc.br/">http://lpvs18.ufsc.br/</a> <a href="mailto:ifac.lpvs18@gmail.com">ifac.lpvs18@gmail.com</a>
10th IFAC Symposium on Biological and Medical Systems BMS 2018	September 03 – 05	São Paulo Brazil	<a href="http://www.ifacbms2018.org/">http://www.ifacbms2018.org/</a> <a href="mailto:secretariat@ifacbms2018.org">secretariat@ifacbms2018.org</a>
10th IFAC/ CEGRE Symposium on Control of Power and Energy Systems CPES 2018	September 04 – 06	Tokyo Japan	<a href="https://www.cpes2018.com">https://www.cpes2018.com</a> <a href="mailto:cpes2018@hotmail.com">cpes2018@hotmail.com</a>
11th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles CAMS 2018	September 09 – 13	Opatija Croatia	<a href="http://ifac-cams2018.com/">http://ifac-cams2018.com/</a> <a href="mailto:cams2018@fer.hr">cams2018@fer.hr</a>
18th IFAC Conference on Technology, Culture and International Stability TECIS 2018	September 13 – 15	Baku Azerbaijan	<a href="https://tecis18.org/">https://tecis18.org/</a> <a href="mailto:kopacek@ihrt.tuwien.ac.at">kopacek@ihrt.tuwien.ac.at</a>
10th INSTICC, IFAC et al. International Joint Conference on Computational Intelligence IJCCI 2018	September 18 – 20	Seville Spain	<a href="http://www.ijcci.org/">http://www.ijcci.org/</a> <a href="mailto:ijcci.secretariat@insticc.org">ijcci.secretariat@insticc.org</a>
5th IFAC Conference on Engine and Powertrain Control, Simulation and Modeling E-COSM 2018	September 20 – 22	Changchun China	<a href="http://www.ascl.jlu.edu.cn/ecosm2018/">http://www.ascl.jlu.edu.cn/ecosm2018/</a> <a href="mailto:gaobz@jlu.edu.cn">gaobz@jlu.edu.cn</a>
17th IFAC Workshop on Control Applications of Optimization CAO 2018	October 15 – 19	Yekaterinburg Russia	<a href="http://cao2018.uran.ru/">http://cao2018.uran.ru/</a> <a href="mailto:cao@uran.ru">cao@uran.ru</a>
13th OTM / IFAC / IFIP International Workshop on Enterprise Integration, Interoperability and Networking EI2N 2018	October 24 – 25	Valletta Malta	<a href="http://www.otmconferences.org/index.php/workshops/ei2n-2018">http://www.otmconferences.org/index.php/workshops/ei2n-2018</a> <a href="mailto:Georg.Weichhart@profactor.at">Georg.Weichhart@profactor.at</a>
Conference on Latin American Conference on Automatic Control (in cooperation with IFAC) XVIII CLCA 2018	October 24 – 26	Quito Ecuador	<a href="http://clca2018.epn.edu.ec/index.php/en/">http://clca2018.epn.edu.ec/index.php/en/</a> <a href="mailto:clca2018@epn.edu.ec">clca2018@epn.edu.ec</a>
5th IFAC Conference on Analysis and Control of Chaotic Systems CHAOS 2018	Oct./Nov. 30 – 01	Eindhoven Netherlands	<a href="http://chaos2018.wtb.tue.nl/">http://chaos2018.wtb.tue.nl/</a> <a href="mailto:chaos2018@tue.nl">chaos2018@tue.nl</a>
IEEE CSS, ACA et al. Conference on Australian and New Zealand Control Conference (in cooperation with IFAC) ANZCC 2018	December 07 – 08	Melbourne Australia	<a href="http://anzcc.org.au/ANZCC2018/index.php">http://anzcc.org.au/ANZCC2018/index.php</a> e-mail: not yet available
2nd IFAC Conference on Cyber-Physical and Human Systems CPHS 2018	December 13 – 15	Miami, FL USA	<a href="http://www.cphs2018.org/">http://www.cphs2018.org/</a> <a href="mailto:cphs2018org@gmail.com">cphs2018org@gmail.com</a>

# Calendar of IFAC Events

Title	2019	Place	Further information
12th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems DYCOPS 2019	April 23 – 26	Florianópolis Brazil	<a href="http://dycopscab2019.sites.ufsc.br/dycops.cab2019@gmail.com">http://dycopscab2019.sites.ufsc.br/dycops.cab2019@gmail.com</a>
3rd IFAC Workshop on Control of Systems Governed by Partial Differential Equations CPDE 2019	May 22 – 24	Oaxaca Mexico	http://not yet available e-mail: not yet available
SICE, ISCIE, JSME, IEEE, IFAC Conference on Asian Control Conference (in cooperation with IFAC) ASCC 2019	June 09 – 11	Kitakyushu, Fukuoka Japan	<a href="http://www.ascc2019.org">www.ascc2019.org</a> <a href="mailto:ascc2019@ascc2019.org">ascc2019@ascc2019.org</a>
IFAC Workshop on Control of Smart Grid and Renewable Energy Systems CSGRES 2019	June 10 – 12	Jeju Republic of Korea	<a href="http://csgres2019.com/yilee@seoultech.ac.kr">http://csgres2019.com/yilee@seoultech.ac.kr</a>
9th IFAC Symposium on Advances in Automotive Control AAC 2019	June 24 – 27	Orléans France	<a href="https://aac19.sciencesconf.org/aac2019@univ-orleans.fr">https://aac19.sciencesconf.org/aac2019@univ-orleans.fr</a>
Conference on European Control Conference (in cooperation with IFAC) ECC 2019	June 25 – 28	Naples Italy	<a href="http://ecc19.eu/technical@ecc19.eu">http://ecc19.eu/technical@ecc19.eu</a>
10th IFAC Symposium on Intelligent Autonomous Vehicles IAV 2019	July 03 – 05	Gdansk Poland	<a href="http://www.konsulting.gda.pl/iav2019/iav2019@konsulting.gda.pl">http://www.konsulting.gda.pl/iav2019/iav2019@konsulting.gda.pl</a>
3rd IFAC Workshop on Thermodynamic Foundations for a Mathematical Systems Theory TFMST 2019	July 03 – 05	Louvain-la-Neuve Belgium	<a href="https://sites.uclouvain.be/tfmst2019/denis.dochain@uclouvain.be">https://sites.uclouvain.be/tfmst2019/denis.dochain@uclouvain.be</a>
Conference on American Control Conference (in cooperation with IFAC) ACC 2019	July 10 – 12	Philadelphia, PA USA	<a href="http://acc2019.a2c2.org">http://acc2019.a2c2.org</a> e-mail: not yet available
5th IFAC IEEE CSS Conference on Intelligent Control and Automation Sciences ICONS 2019	August 21 – 23	Belfast United Kingdom	http://not yet available e-mail: not yet available
9th IFAC IEEE IFIP IFORS et al. Conference on Manufacturing Modelling, Management and Control MIM 2019	August 28 – 30	Berlin Germany	<a href="https://blog.hwr-berlin.de/mim2019/mim2019@hwr-berlin.de">https://blog.hwr-berlin.de/mim2019/mim2019@hwr-berlin.de</a>
18th IFAC Symposium on Control, Optimization and Automation in Mining, Mineral and Metal Processing MMM 2019	August 28 – 30	Stellenbosch South Africa	http://not yet available e-mail: not yet available
11th IFAC Symposium on Nonlinear Control Systems NOLCOS 2019	September 03 – 05	Vienna Austria	<a href="http://www.mechatronicsnolcos2019.org/contact@mechatronicsnolcos2019.org">http://www.mechatronicsnolcos2019.org/contact@mechatronicsnolcos2019.org</a>
8th IFAC Symposium on Mechatronic Systems MECHATRONICS 2019	September 03 – 05	Vienna Austria	<a href="http://www.mechatronicsnolcos2019.org/contact@mechatronicsnolcos2019.org">http://www.mechatronicsnolcos2019.org/contact@mechatronicsnolcos2019.org</a>
7th IFAC Symposium on System Structure and Control SSSC 2019	September 09 – 11	Sinaia Romania	<a href="http://automation.ucv.ro/sssc2019/">http://automation.ucv.ro/sssc2019/</a> e-mail: not yet available

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Bundesministerium  
für Verkehr,  
Innovation und Technologie

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Title	2019	Place	Further information
15th IFAC Workshop on Time Delay Systems TDS 2019	September 09 – 11	Sinaia Romania	<a href="http://automation.ucv.ro/tds2019/">http://automation.ucv.ro/tds2019/</a> e-mail: not yet available
14th IFAC Symposium on Analysis Design and Evaluation of Human Machine Systems HMS 2019	September 16 – 19	Tallinn Estonia	http://not yet available e-mail: not yet available
1st IFAC Workshop on Control Methods for Water Resource Systems CMWRS 2019	September 19 – 20	Delft Netherlands	http://not yet available e-mail: not yet available
5th IFAC Symposium on Telematics Application TA 2019	September 25 – 27	Chengdu China	http://not yet available e-mail: not yet available
19th IFAC Conference on Technology, Culture and International Stability TECIS 2019	September 26 – 28	Sozopol Bulgaria	http://not yet available e-mail: not yet available
8th IFAC/CACHE Conference on Foundations of Systems Biology in Engineering FOSBE 2019	October 14 – 19	Valencia Spain	http://not yet available e-mail: not yet available
15th European Workshop on Advanced Control and Diagnosis ACD 2019	November 21 – 22	Bologna Italy	<a href="https://eventi.unibo.it/acd2019">https://eventi.unibo.it/acd2019</a> <a href="mailto:acd2019@unibo.it">acd2019@unibo.it</a>
Title	2020	Place	Further information
21st IFAC World Congress 2020	July 12-17	Berlin Germany	<a href="https://www.ifac2020.org">https://www.ifac2020.org</a> <a href="mailto:info@ifac2020.org">info@ifac2020.org</a>

The IFAC Calendar of Events is constantly updated as additional technical events (Workshops, Symposia, and Conferences) are approved. The online version of the IFAC Calendar of Events is available at:  
<https://www.ifac-control.org/events/>

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