

## Reports From Recent IFAC Technical Events

IFAC holds 40+ technical events (workshops, conferences, and symposia) in years where the flagship IFAC World Congress event does not take place. (Few or no additional events take place in a Congress year, and any exceptions are only made with the permission of the IFAC President).

The most recent World Congress was held in July 2017 (Toulouse, FR) and the next IFAC World Congress are scheduled to take place in July 2020 (Berlin, DE) and 2023 (Yokohama, JP). The calendar of events is provided in each issue of this Newsletter, and is available online at:

<https://www.ifac-control.org/events/>

### Advances in Control and Optimization of Dynamical Systems (5<sup>th</sup> ACDOS 2018)

18-22 February 2018  
Hyderabad, India

The 5<sup>th</sup> ACDOS 2018 attracted 217 participants (182 from the host country, 14 from industry, 20 women). In total 137 papers were scheduled, and 121 were presented. The top five countries represented were: India, followed by the US, UK, South Korea, Italy and France. Dr. A.K. Sarkar, Scientist G, Defense Research & Development Laboratories (DRDL @ Hyderabad) was the General Chair, and Dr. Padmanabhan K Menon, Optimal Synthesis Inc., US was the Co-Chair. The conference received major funding from the Defense R & D Organization (DRDO), Government of India. Additional funding was provided by private industry, including Mathworks.

The conference was opened on February 18 by Dr S. Christopher, Chairman, DRDO, New Delhi, followed by IFAC President Prof. Frank Allgöwer (DE), who addressed the inaugural function. F. Allgöwer's plenary talk was "Model Predictive Control: The Past, Present and Future". Further, many globally renowned control and guidance experts, including PK Manon, Chairman & CEO, Optimal Synthesis Inc; Sarah Spurgeon (University College of London, UK); MinJea Tahk, Korea Advanced Institute of S&T; as well as Reza Moheimani (University of Texas-Dallas, US) presented plenary lectures. Sarah Spurgeon's talk was about "Sliding Modes for Failure Detection and Estimation". Reza Moheimani's talk was concerned with the LDCN's work on control system design for atomically precise manufacturing (APM). In total there were six plenary talks and three semi-plenary talks. Three of the talks were given by women.

Moreover the following workshops were held:

- *Dynamics and Control of Air Traffic*: Dr. P.K. Menon (US)
- *Learning from Data to Take Smart Decisions in Complex and Multi-Agent Systems*: Maria Prandini, Professor at Politecnico di Milano (Italy)
- *Numerical Treatment of Flight Dynamics and Control in a Nonlinear Framework*: Dr Nandan Kumar Sinha, Professor of Aerospace Engineering IIT Madras (India)
- *Modeling, Simulation and Control of a Quadcopter*: Naga Chakrapani P., and Chethan C U, MathWorks (India)

On the evening of February 20 there was a grand banquet with a best paper award ceremony and a cultural program showcasing one of the classical dance forms of South India. On day 5, there were sightseeing tours arranged for all the event attendees and their accompanying persons, which were included as a part of the registration.



Prof. Frank Allgöwer (DE), IFAC President, at the inaugural function of ACDOS 2018

Submitted by:  
Dr. Ramakalyan Ayyagari (Indian NMO President)

### Advances in Proportional Integral-Derivative Control (3<sup>rd</sup> PID 2018)

9-11 May 2018  
Ghent, Belgium

The 3<sup>rd</sup> IFAC Conference on Advances in Proportional-Integral-Derivative Control (PID'18) was held in Ghent, Belgium, from 9-11 May 2018, organized by Ghent University (BE) in cooperation with BIRA (Belgian Association of Automation), IE-NET (Industrial Engineering Network) and Flanders Make (Indus-

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### The IFAC Journals

**Automatica**  
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**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>

trial Development Platform). PID'18 has been sponsored by the IFAC Technical Committee on Control Design (TC 2.1) and co-sponsored by the IFAC Technical Committee on Chemical Process Control (TC 6.1) and the IFAC Technical Committee on Control Education (TC 9.4). The conference follows the prior trademark events from 2000 (Terrassa, ES) and from 2006 (Brescia, IT). PID'18 aimed at gathering academic and industrial experts in the field in order to present the recent research developments in the design of PID controllers and to provide a perspective of the future requirements for PID controllers in industry, with focus on Industry 4.0 relevance.

Former PID'12 chair Antonio Visioli (Brescia Univ., IT) served as IPC chair and Alf Isaksson (ABB, SE) served as IPC Vice-Chair for Industry. Proceedings editor was Daniel Rodriguez Ramirez (University of Seville, ES). National Organizing Committee (NOC) Chair was Clara Ionescu (Ghent University, BE) together with NOC Industry Chair Geert Deconinck (Industrial Control and Automation – BIRA) and NOC Industry Vice-Chairs: Joseph Serneels (IE-NET) and Dirk Torfs (Flanders Make). The International Program Committee with 54 members from 23 countries provided excellent support in reviewing all 190 submissions to the conference, with a total of 555 authors (cumulative number) from 35 countries. Eventually, 164 papers have been accepted, distributed in 9 interactive sessions and 25 oral presentation sessions among the 182 registered participants, from which 11% was industry participation.

The program further contained four plenary speakers:

- Kevin Starr (ABB, US): *Industrial Loop Tuning In the Digital Age*
- Tao Liu (Dalian University of Technology, CN): *New PID Designs For Sampling Control and Batch Process Optimization*
- Julio Normey-Rico (Universidad Federal De Santa Catarina, BR): *PID Control of Dead-time Processes: Robustness, Dead-time Compensation and Constraints Handling*
- Yang Quan Chen (University of California, Merced, US): *Fractional Order PID Control: Better Than The Best Issue And What's Next*

The first day of the conference dedicated to industry, additionally featured two keynote speakers:

- Stijn Derammelaere (Antwerpen University, BE): *Take The Fast Lane: Sophisticated Yet Accessible Motion Control Techniques.*
- Jan Verhasselt (YAZZOOM, BE): *A Practical Approach For Integrating and Maintaining Computational Models In Control.*

Readers of this Newsletter are kindly requested to keep their contact details updated with the IFAC Secretariat.  
<https://www.ifac-control.org/about/ifac-affiliate-registration>

Two honored guests were invited and attended PID18: Karl-Johan Åström and Tore Hägglund from Lund University, Sweden. They were involved in both the industry panel and control education panel, respectively: on 9 May, *New Perspectives In Industrial PID Control* and on 10 May: *What Is an Ideal Undergraduate Control Curriculum?* The industry panel on 9 May was chaired by K. J. Åström, starting with a nice overview provided by Ramon Vilanova (UAB, ES) and the following panelists: Davide Colombo (Gefran, IT), Alf Isaksson (ABB, SE), Jan Verhasselt (YAZZOOM, BE), Sigurd Skogestad (NTNU, NO), Yongduan Song (Chongqing University, CN), and Massimiliano Veronesi (Yokogawa, IT). The conclusion was that despite PID control being a mature technology, there is still a highly significant gap between academia and industry, with respect to low level loop instrumentation, design and tuning. The challenge for data streaming and control was yet again the Industry 4.0 feature on wireless communication systems, where both TC 2.1 (Control Design) and TC 6.1 (Chemical Process Control) play an important role.



At PID 2018 left to right: Damiano Rotondo (ES), Reza Katebi (UK), Sigurd Skogestad (NO), Anthony Rossiter (UK)

The educational panel on 10 May was chaired by Anthony Rossiter (Sheffield Univ, UK), with panelists: Ferdinand Kieckhäfer (Hamburg University, DE), Tore Hägglund (Lund University, SE), Paulo Moura Oliveira (UTAD, PT), Guy Dumont (The University of British Columbia, CA), Tao Liu (Dalian University of Technology, CN). The conclusion was that structured and standardized curriculum content is needed at the Bachelor, Master and Doctoral program levels across universities. Dissemination of a carefully designed enquiry list to probe the state of use in curriculum and current needs/gaps is ongoing task of related members of TC 9.4 (Control Education). Special thanks go to Bozenna Pasik-Duncan (Technical Board Education Liaison, US) who flew in last minute especially to attend our event and acknowledged women in control engineering at the dinner party in Brugge.

Sessions took place on 11 May dedicated to Benchmark Challenge for PID Control of Refrigeration Systems based on Vapour Compression, which were proposed by proposed by G. Bejarano, J. A. Alfaya, D. Rodríguez, M. G. Ortega (University of Seville, ES) and F. Morilla (UNED, Madrid, ES). The benchmark process received 14 contributions, with the finalist selected papers with first author: M. Tari (Universite de Bordeaux, France), J. Garrido (University of Cordoba, Spain), V. Bordignon

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## From the IFAC President

Dear Friends and Colleagues,

Have you heard of POL? Do you have an idea what POL stands for? And no, this is not an abbreviation for a German soccer club, such as FCB, BVB or VfB (although, now that I think of it, German soccer skills would also be an interesting subject for the presidential column at the time of the World Cup). POL stands for PapersOnLine. Most likely, your work is actually already on PapersOnLine if you have presented your research outcomes at one of the various IFAC events all over the world (or even at some co-sponsored IFAC events). And why should one be interested in POL? Because PapersOnLine was set-up such that it is supposed to be most beneficial for the control community in general, and hence also for you!

Let me start with the greatest advantage. PapersOnLine is Gold Open Access. This means that the site is Open Access in nature - no charge is made to individuals for reading or downloading, immediately after publication. As an individual, this means you have access to papers from IFAC Symposia, Congresses, Conferences and most Workshops free of charge, wherever you are. As an author, this means that all interested researchers have no difficulty accessing your results, independently of which subscription their university or employer agreed to. Of course, Open Access should not be the only point authors should consider. All papers accepted at IFAC events are published in PDF format in PapersOnLine - searchable and citable. In fact, its papers are indexed on Scopus, Thomson Reuters Web of Science and Google Scholar, thus enabling citations, facilitating the search and improving the visibility of your papers. Furthermore, all papers published on the web site can be cited using the IFAC PapersOnLine ISSN and the individual paper DOI (Digital Object Identifier). The IFAC-PapersOnLine proceedings series are published in partnership with Elsevier, and hosted on ScienceDirect and they have an Editor-in-Chief, Juan Antonio de la Puente, who has done a tremendous job in the last years. For more information or for interesting new Gold Open Access papers, you can browse through <https://www.sciencedirect.com/journal/ifac-papersonline>.

'But if everything is Open Access, who pays for the infrastructure etc.?', you might ask, or 'How can IFAC make profit in this business model?'. In fact, it is quite the opposite. IFAC pays the uploading fee to POL for all papers from IFAC events. Hence, neither the event organizers nor the conference registrants have to pay for POL. This is a common misunderstanding concerning IFAC events. IFAC does not receive any money or profit from IFAC events or from their published event papers but, on the contrary, subsidizes them, amongst others, by providing the upload to POL. This conforms to IFAC's aims and constitution, which states that IFAC "does not engage in any activity with financial or political aims" but has the primary objective to "serve all those concerned with the theory and application of automatic control and systems engineering, wherever situated".

I can say, I am very happy in how POL has developed and the benefit it brings to our community. Therefore, I invite you to also take advantage of it - whether as an author or as an interested reader.

Best wishes from Stuttgart, Frank Allgöwer

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((Universidade Federal de Rio Grande, Brazil), D. Rodriguez (University of Seville, Spain) and winner D. Huff (Universidade Federal de Rio Grande, Brazil) with paper "Data-Driven Control Design by Prediction Error Identification for a Refrigeration System Based on Vapor Compression".

Young Author Award received 6 nominations, with selected finalists: S. Jain (Indian Institute of Technology, India), J.D. Gil (Universidad de Almeria, Spain) and winner A. Hoyo (University of Almeria, Spain) for the paper "Robust QFT-based PI Controller for a Feedforward Control Scheme".

The timely organization of the conference enabled fruitful discussions. The participants have appreciated the technical program as well as the social one and were very happy with the quality of the presentations throughout all days of the conference. To conclude, it can be said that the IFAC Conference on Advances in PID Control (PID'18) has had a very high level of attendance, with a very active participation in most technical activities and the general feeling we have got from attendees' comments has been very positive. Of course, the success of the PID '18 technical program is the result of the efforts made by many people. On behalf of both the NOC and IPC, we would like to thank all the authors, IPC members, NOC members, reviewers, and participants for their contributions, and also the session chairs and co-chairs for conducting the technical sessions and providing valuable feedback on their development. We are grateful to the many volunteers who have contributed to the organization, to Pradeep Misra for technical support in Papercept and to Katharina Willixhofer from the IFAC Secretariat for swift replies.

Submitted by:

Clara M. Ionescu, NOC Chair,  
and Antonio Visioli, IPC Chair

## Lagrangian and Hamiltonian Methods for Nonlinear Control (6<sup>th</sup> LHMNC 2018) 1-4 May 2018 Valparaiso, Chile

The 6<sup>th</sup> IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control has been held in Valparaiso, Chile, at Universidad Técnica Federico Santa María from 1-4 May 2018. It was organized by the Advanced Center for Electrical and Electronic Engineering <http://www.ac3e.cl/index.php/en>

The workshop has been sponsored by the IFAC TC 2.3 (Nonlinear Control Systems) and co-sponsored by IFAC TC 2.6 (Distributed Parameter Systems) and IEEE TC on Distributed Parameter Systems. The workshop received the financial support of the French and German National Agencies of Research ANR-DFG through the INFIDHEM project (ANR-16-CE92-0028), and the Chilean Research Agency (CONICYT) through FONDECYT grant 1181090.

Driven by many applications originating from mechatronics, power systems, robotics, aerospace, process control or fluid dynamics, etc. research on modeling and control of non-linear and multi-physical systems has attracted increasing interest and has undergone important developments. A very efficient design method, based on the Lagrangian and Hamiltonian formulations of physical systems' dynamics, has been increasingly developed and used in the last years. These formulations allow combining the powerful design methods using passivity-based control with the specific properties of the differential-geometric structure of the Lagrangian and Hamiltonian systems. Recent developments have shown that generalizations of the Hamiltonian and Lagrangian frameworks can be used for distributed parameter systems with applications in fluid dynamic systems, fluid-structure interactions, acoustics, quantum mechanics as well as for irreversible thermodynamic systems with applications to chemical engineering, biological processes and smart materials among others.

The motivation of this 6<sup>th</sup> IFAC Workshop LHMNC 2018 was to highlight new modeling and control problems, as well as to bring together control experts to discuss about recent methodological developments for the modeling, the analysis, and the control of nonlinear open multi-physical systems and their integration into various classical and emerging application areas.

The technical program of LHMNC 2018 included four invited plenary sessions, three invited session and six regular sessions. The technical program is available at the workshop website and also at <https://ifac.papercept.net/conferences/conferences/LHM18/program/LHM18ProgramAtAGlanceWeb.html>.



From left to right: Juan Yuz (CL), Paul Ko-tyczka (DE), Alessandro Macchelli (IT) Arjan van der Schaft (NL), Hector Ramirez (FR), Bernhard Maschke (FR) and Yann Le Gorrec (FR) at the 6<sup>th</sup> LHMNC, Chile

The plenary sessions addressed various exciting and emerging research activities in the field of modeling and control of nonlinear and multi-physical systems. Bernhard Maschke opened the workshop with a talk on "Port Hamiltonian Systems Defined On Contact Manifolds" in which he gave a state of the art of recent advances in modeling and control of irreversible thermodynamic systems. The second talk entitled "Koopman Operator Theory in Dynamical Systems and Control" given by Igor Mezic dealt with nonlinear dynamics and control via lifting on an infinite dimensional space, model reduction using Koopman modes and control.

The second day started with the talk of Volker Mehrmann entitled "Port Hamiltonian Modeling, Simulation and Optimization For Coupled Multi-Physics and Multi-Scale Systems" dealing with numerical issues and specificities related to port Hamiltonian representation of complex systems, model hierarchies and multi-physical systems represented by DAEs. The same day the talk "Variational and Hamiltonian Techniques in Aerospace Engineering – A Variational Approach To Robust Optimal Control" given by Kenji Fujimoto proposed some recent results on robust optimal control through generating functions methods, singular avoidance and nonlinear Kalman filter with constraints with applications in aeronautics.

Complementing the plenary sessions, the program was completed by three invited sessions on Thermodynamic Systems, Distributed Parameter Systems and Control Design Techniques and different regular technical sessions addressing in detail key issues in modeling and control of Lagrangian and Hamiltonian systems.

The sixth workshop on "Lagrangian and Hamiltonian Methods for Non-Linear Control" gathered 53 participants from 16 countries spread among South and North America, Europe, Asia and Oceania. Participants, coming from different areas and different fields of research, were very actively involved in the different sessions and plenaries. The format of the workshop with a unique plenary track provided many opportunities for lively discussions and fruitful exchanges. The location of the workshop in the UNESCO World Heritage Site of Valparaiso Chile was perfect for connecting researchers from the northern and southern hemispheres and to foster new collaborations and emerging activities between these people.

Associated with the IFAC LHMNC 2018 workshop, a Doctoral School was held at the same venue on 30 April and 1 May. The pre-workshop school was on an Introduction to modeling and control of port-Hamiltonian systems, gathering 37 participants with the following speakers: Yann Le Gorrec, Alessandro Macchelli, Paul Kotyczka, Arjan van der Schaft, Bernhard Maschke, and Héctor Ramirez.

People curious about getting a more precise idea of the workshop may also want to consult some slides on the website at <http://www.lhmnc18.org/>

Submitted by: Juan I. Yuz, Universidad Técnica Federico Santa María, CHILE and Yann Le Gorrec, FEMTO-ST, FRANCE

Check out IFAC's YouTube channel for new and historical IFAC video materials!

<https://www.ifac-control.org/>

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## Who's Who in IFAC: Introducing Some IFAC Officials

### IFAC Council Member

**Alexander M. Tarasyev** (RU), who is serving as an ordinary member of the IFAC Council for the 2017-2020 triennium, received the M.Sc. degree in mathematics in 1981 from the Ural State University named after A.M. Gorky (Sverdlovsk, USSR; now known as Yekaterinburg, Russia). His M.Sc. thesis on "Algorithms For Construction Of Stable Bridges In Differential Games" was awarded with the Prize of the Ministry of Higher and Secondary Special Education of the Russian Federation. In 1984, he defended his PhD dissertation in differential equations titled "Analysis and Construction Of Guaranteed Solutions In Problems Of Feedback Control" at the Ural State University.



Starting from 1984 and continuing through the present, A. Tarasyev is with Krasovskii Institute of Mathematics and Mechanics (IMM) of the Ural Branch of the Russian Academy of Sciences in Yekaterinburg. In 1988, he was awarded with the Prize of the Sverdlovsk Komsomol Organization and by the Presidium of the Ural Branch of the Russian Academy of Sciences for his series of works on numerical solution of optimal control problems and differential games via grid schemes based on nonsmooth constructions for Hamilton-Jacobi equations. In 1996, he received the degree of Doctor of Science (Physics and Mathematics) for his thesis "Constructions and methods of nonsmooth analysis in problems of optimal guaranteed control" from the Dissertation Council on Differential Equations at IMM.

In the period of 1994-2014, A. Tarasyev was serving for the International Institute for Applied Systems Analysis (IIASA, Laxenburg, Austria) as Senior Researcher in the Dynamic Systems Program at part-time and full-time (1996-2000) positions. In 1994, he received the Peccei Prize at IIASA for his research in the theory of dynamic bimatrices games on infinite horizon.

In 2001-2015 A. Tarasyev was Head of Sector on Dynamic Optimization, and since 2015 he is Head of the Dynamic Systems Department at IMM specializing in the mathematical theory of optimal control, differential games, dynamic optimization, generalized (minimax, viscosity) solutions of Hamilton-Jacobi equations, mathematical modeling.

In 2010, A. Tarasyev received the Prize of Academician A.I. Subbotin for the best work in mathematics (for the series of papers on application of optimal control and Hamiltonian dynamics to

models of economic growth) from the Presidium of the Ural Branch of the Russian Academy of Sciences.

He is also a professor on a part-time position at the Ural Federal University and Liberal Arts University in Yekaterinburg, reading lectures on optimal control, mathematical modeling, economics, financial mathematics, and econometrics.

In IFAC, A. Tarasyev has served as Chair of TC 2.4 (Optimal Control) from 2008-2014 and as Vice-Chair of TC 2.4 from 2014-2017.

Editor's Note: The full list of IFAC Council members can be found at:

<https://www.ifac-control.org/structure/council>

### Technical Board Member (Publications Liaison)

**Patrizio Colaneri** (IT) received the Laurea degree in Electrical Engineering from the Politecnico di Milano (IT) in 1981 and the Ph.D. degree (Dottorato di Ricerca) in Automatic Control from the Italian Ministry of Education and research in 1988. He is full professor of Automatica at Politecnico di Milano, where he served as head of the Ph.D. school on ICT (2007-2009). He has held visiting positions at the University of Maryland (US), at the Hamilton Institute of the National University of Ireland, and at the Institute for Design and Control of Mechatronical Systems of Johannes Kepler University in Linz (Austria).



P. Colaneri has served IFAC and IEEE CSS in many capacities with both journals and technical events. In particular he was Associate Editor of Automatica for six years, Senior Editor of IEEE TAC for eight years, IPC Chair of the IFAC Symposium ROCOND in Milan, IT (2003), IPC Vice Chair of the CDC in Florence, IT (2013), and IPC Chair of the IEEE Multi Conference on System and Control (CCA) in Buenos Aires, AR (2016). He is currently Senior Editor of the IFAC journal "Non Linear Analysis: Hybrid Systems", and a member of the IFAC Technical Board (publications liaison). He is a Fellow of both IFAC and IEEE.

P. Colaneri's main interests are in the area of periodic systems and control, robust filtering and control, and switching control. He has authored/co-authored about 250 papers and seven books.

### Technical Board Vice-Chair (Theory, CCs 1-4)

**Ji-Feng Zhang** (CN), IFAC Technical Board Vice Chair, was born in Shandong, China, on September 22, 1963. He received the B.S. degree in mathematics from Shandong University, China, in 1985, and the M.S. and Ph.D. degrees from the Institute of Systems Science (ISS), Chinese Academy of Sciences (CAS), China, in 1988 and 1991, respectively. Since 1985, he has been with the ISS, CAS, and now is a professor of AMSS and the director of ISS. His current research interests include system modeling, adaptive control, stochastic systems, and multi-agent systems.



J. Zhang is an IEEE Fellow, IFAC Fellow, CAA Fellow, a member of the European Academy of Sciences and Arts, and an Academician of the International Academy for Systems and Cybernetic Sciences. He received the Second Prize of the State Natural Science Award of China in 2010 and 2015, respectively, the Distinguished Young Scholar Fund from National Natural Science Foundation of China in 1997, the First Prize of the Young Scientist Award of CAS in 1995, Excellent Chinese Doctoral Dissertation Supervisor in 2009, Excellent Graduate Student Supervisor of CAS in 2007, 2008 and 2009, respectively.

J. Zhang has served as Convenor of Systems Science Discipline, Academic Degree Committee of the State Council, China; Vice President of the Chinese Association of Automation (CAA); Vice President of the Systems Engineering Society of China; standing member of the Chinese Mathematical Society; standing member of the China Society for Industrial and Applied Mathematics; Vice-President of the Shanghai Academy of Systems Science; Vice-President of the Beijing Mathematical Society; Chair of the Technical Committee on Control Theory, CAA, and member of the Board of Governors of the IEEE Control Systems Society. He was the founding Editor-in-Chief of the popularization magazine "All About Systems and Control", and has served as Editor-in-Chief, Managing Editor, Deputy Editor-in-Chief or Associate Editor for more than 10 journals, including "Science China: Information Sciences", "IEEE Transactions on Automatic Control" and "SIAM Journal on Control and Optimization". He was General Co-Chair of the 32nd Chinese Control Conference and the 33rd Chinese Control Conference; General Vice-Chair of the 1st China Systems Science Congress; Program Chair of the 2012 IEEE Conference on Control

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Applications, the 9<sup>th</sup> World Congress on Intelligent Control and Automation, the 30<sup>th</sup> Chinese Control Conference and the 2<sup>nd</sup> China Systems Science Congress; and Organizing Committee Co-Chair of the 21<sup>st</sup> through to 26<sup>th</sup> Chinese Control Conferences.

In IFAC, J. Zhang is serving a second term as Vice-Chair of the IFAC Technical Board (2014-2017 and now 2017-2020). He served as one of the IPC Vice-Chairs of the 20<sup>th</sup> IFAC World Congress (Toulouse, FR, July 2017), and IPC Co-Chair of the 17<sup>th</sup> IFAC Symposium on System Identification (Beijing, CN, October 2015).

### Technical Board Member

**Maria Elena Valcher** (IT) received the Master Degree (cum laude) in Electronic Engineering (1991) and the Ph.D. Degree in Systems Engineering (1995) both from the University of Padova (Italy). Since January 2005 she is Full Professor of Control Theory at the University of Padova.

M.E. Valcher is author/co-author of approximately 83 papers appeared on international journals, 96 conference papers and 16 book chapters. Her research interests include multidimensional systems theory, polynomial matrix theory, behavior theory, Boolean control networks, multi-agent systems and consensus problems, switched systems and positive systems.



She served on the Editorial Boards of the *IEEE Transactions on Automatic Control* (2000-2003), *Systems and Control Letters* (2004-2010), *Automatica* (2006-2013), *SIAM J. on Control and Optimization* (2012-2014), and she is currently in the Editorial Boards of *Multidimensional Systems and Signal Processing* (2004-today), the *European Journal of Control* (2013-today) and *IEEE Access* (2014-now).

Since January 2017 she is the Editor in Chief of the *IEEE Control Systems Letters*.

M.E. Valcher held various positions within the IEEE Control Systems Society: Appointed BoG Member (2003); Elected BoG Member (2004-2006; 2010-2012); Vice President Member Activities (2006-2007); Vice President Conference Activities (2008-2010); President-Elect (2014); President (2015); Junior Past President (2016). She was involved in the organization of several conferences, in particular she was registration Chair of the 2004 IEEE CDC, Publicity Chair of the 2007 MSC, Registration Chair of the 2011 IFAC World Conference and Program Chair of the 2012 IEEE CDC.

She was a member of the 2013, 2014 and 2015 IEEE Control Systems Award committee, a

member of the 2016 IEEE Fellow Committee, and of the 2016 IEEE TAB Ad Hoc Committee on Women and Under-Represented Groups. She was a Distinguished Lecturer of the IEEE CSS (2011-2014). She received the 2011 IEEE CSS Distinguished Member Award and she is an IEEE Fellow since 2012. She is currently a member of the IEEE Tab Committee On Diversity and Inclusion (2017-2018).

M.E. Valcher was in the 2014-2017 Awards Committees for two IFAC Journals: *Automatica* and *NAHS*. She is a member of the IFAC Technical Board (2017-2020).

A extended version of Valcher's CV is available at: <http://www.dei.unipd.it/~meme/MEV/CurriculumVitae.html>

The list of Valcher's publications is available at: <http://www.dei.unipd.it/~meme/MEV/Publications.html>

Editor's Note: Further information about the structure and membership of the IFAC Technical Board can be found at: <https://www.ifac-control.org/structure/technical-board>

**IFAC is on social media!**  
Direct links to IFAC's presence on Facebook, LinkedIn, and Twitter can be found on the IFAC website.

### Reminder: Council- and Related Meetings 1-3 September 2018 Florianopolis, Brazil

The next Council- and Related Meetings will take place in Florianopolis, Brazil, from September 1-3 2018, 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).

The Technical Board meeting is scheduled on Saturday, September 1 from 09:00-13:00, and the Executive Board meeting will be held on Sunday, Sept. 2 from 14:30-17:30. The Council meeting is scheduled on Monday, Sept. 3 from 09:00-16:00. In the afternoon there will be the first round of the IFAC 2026 bid presentations.

Please check the travel and visa requirements for your country accordingly.  
<http://rocond18.ufsc.br/>

Venue, Travel, and Visa information:  
<http://lpvs18.ufsc.br/Travel.html>

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## IFAC Journal of Systems & Control: Highlights

*IFAC Journal of Systems and Control* is publishing highly downloaded content! IFAC's newest publication *IFAC Journal of Systems & Control* (Editor-in-Chief Bob Bitmead, Deputy Editor-In-Chief Carlos Eduardo Pereira, with editorial board members Geoff Chase, Benoît lung, Duncan McFarlane, Sebastian Dormido, and João Gomes da Silva) has already published some outstanding papers from leaders in the community. The journal publishes high-quality research papers containing generalizable, extensible and transferable innovations across all aspects of the field of control and automation. We hope everyone has found the journal to be an interesting and valuable addition to their reading list. The most heavily downloaded papers so far are:

- *Optimal Control, MPC and MPC-like Algorithms For Wave Energy Systems: An Overview*  
Nicolás Faedo, Sébastien Olaya, John V. Ringwood  
<https://www.sciencedirect.com/science/article/pii/S2468601817301104>
- *Formation Shape Control With Distance and Area Constraints*  
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<https://www.sciencedirect.com/science/article/pii/S246860181730069X>
- *System Identification Through Online Sparse Gaussian Process Regression With Input Noise*  
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<https://www.sciencedirect.com/science/article/pii/S2468601817301347>
- *Hierarchical Distributed ADMM For Predictive Control With Applications In Power Networks*  
Philipp Braun, Timm Faulwasser, Lars Grüne, Christopher M. Kellett, Steven R. Weller  
<https://www.sciencedirect.com/science/article/pii/S2468601817301219>



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Submitted by: Alison Waldron, Elsevier

## Calendar of IFAC Events

Title	2018	Place	Further information
18th IFAC/IEEE CSS Symposium on System Identification SYSID 2018	July 09 – 11	Stockholm Sweden	<a href="https://www.kth.se/en/eecs/om-oss/konferenser-och-event/sysid2018">https://www.kth.se/en/eecs/om-oss/konferenser-och-event/sysid2018</a> <a href="mailto:hanna.holmqvist@ee.kth.se">hanna.holmqvist@ee.kth.se</a>
6th IFAC Conference on Analysis and Design of Hybrid Systems ADHS 2018	July 11 – 13	Oxford United Kingdom	<a href="http://www.cs.ox.ac.uk/conferences/ADHS18/">http://www.cs.ox.ac.uk/conferences/ADHS18/</a> <a href="mailto:aabate@cs.ox.ac.uk">aabate@cs.ox.ac.uk</a>
6th IFAC Conference on Bio-Robotics BIROBOTICS 2018	July 13 – 15	Beijing China	<a href="http://123.57.55.167:8080/caumeeting/caumeetingweb2018/index.html">http://123.57.55.167:8080/caumeeting/caumeetingweb2018/index.html</a> e-mail: not yet available
10th IFAC Symposium on Advanced Control of Chemical Processes ADCHEM 2018	July 25 – 27	Shenyang, China	<a href="http://www.adchem2018.org/">http://www.adchem2018.org/</a> <a href="mailto:adchem2018@mail.neu.edu.cn">adchem2018@mail.neu.edu.cn</a>
15th International Conference on Informatics in Control, Automation and Robotics (in cooperation with IFAC) ICINCO 2018	July 29 – 31	Porto, Portugal	<a href="http://www.icinco.org/">http://www.icinco.org/</a> <a href="mailto:icinco.secretariat@insticc.org">icinco.secretariat@insticc.org</a>
7th CACHE, IFAC Conference on Foundation of Systems Biology in Engineering FOSBE 2018	August 05 – 08	Chicago, IL USA	<a href="http://www.fosbe.org/">http://www.fosbe.org/</a> <a href="mailto:rcraven@fosbe.org">rcraven@fosbe.org</a>
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/">https://fwn06.housing.rug.nl/necsys2018/</a> <a href="mailto:necsys18@rug.nl">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>

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Title	2018	Place	Further information
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/gaobz@jlu.edu.cn">http://www.ascl.jlu.edu.cn/ecosm2018/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> e-mail: not yet available
Conference on Latin American Automatic Control (in cooperation with IFAC) XVIII CLCA 2018	October 24 – 26	Quito Ecuador	<a href="http://clca2018.epn.edu.ec/index.php/en/clca2018@epn.edu.ec">http://clca2018.epn.edu.ec/index.php/en/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/chaos2018@tue.nl">http://chaos2018.wtb.tue.nl/chaos2018@tue.nl</a>
2nd IFAC Conference on Cyber-Physical and Human Systems CPHS 2018	December 13 – 15	Miami, FL USA	<a href="http://www.cphs2018.org/cphs2018org@gmail.com">http://www.cphs2018.org/cphs2018org@gmail.com</a>
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/ascc2019@ascc2019.org">www.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	http://not yet available e-mail: not yet available
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>

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## Calendar of IFAC Events

Title	2019	Place	Further information
3rd IFAC Workshop on Thermodynamic Foundations for a Mathematical Systems Theory TFMST 2019	July 08 – 10	Louvain-la-Neuve Belgium	<a href="https://sites.uclouvain.be/tfmst2019/">https://sites.uclouvain.be/tfmst2019/</a> <a href="mailto:denis.dochain@uclouvain.be">denis.dochain@uclouvain.be</a>
Conference on American Control Conference (in cooperation with IFAC) ACC 2019	July 10 – 12	Philadelphia, PA USA	<a href="https://aac19.sciencesconf.org/">https://aac19.sciencesconf.org/</a> email: 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/">https://blog.hwr-berlin.de/mim2019/</a> e-mail: not yet available
18th IFAC Symposium on Control, Optimization and Automation in Mining, Mineral and Metal Processing MMM 2019	August 28 – 30	Stellenbosch South Africa	<a href="http://not yet available">http://not yet available</a> 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/">http://www.mechatronicsnolcos2019.org/</a> <a href="mailto:contact@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/">http://www.mechatronicsnolcos2019.org/</a> <a href="mailto:contact@mechatronicsnolcos2019.org">contact@mechatronicsnolcos2019.org</a>
14th IFAC Symposium on Analysis Design and Evaluation of Human Machine Systems HMS 2019	September 16 – 19	Tallinn Estonia	<a href="http://not yet available">http://not yet available</a> e-mail: not yet available
5th IFAC Symposium on Telematics Application TA 2019	September 25 – 27	Chengdu China	<a href="http://not yet available">http://not yet available</a> e-mail: not yet available
19th IFAC Conference on Technology, Culture and International Stability	September 26 – 28	Sozopol Bulgaria	<a href="http://not yet available">http://not yet available</a> 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="http://www.ifac2020.org/">http://www.ifac2020.org/</a> e-mail: not yet available

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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Der 'IFAC Newsletter' erscheint sechsmal jährlich in englischer Sprache unter der Redaktion des Generalsekretärs der IFAC, Univ.Professor Kurt Schlacher (Österreich). Die Zeitschrift dient der Information über die Aktivitäten der IFAC. Sie wird kostenlos an Abonnenten in 50+ Länder versandt. Die Kosten werden von der IFAC aus Beiträgen der derzeit 49 Mitgliedsländer getragen.

Präsident der IFAC für 2017-2020 ist Prof. Frank Allgöwer (Deutschland), Vizepräsidenten sind Prof. Paul Van den Hof (die Niederlande) und Prof. Dong-Il „Dan“ Cho (Korea). Alle Funktionen werden ehrenamtlich ausgeübt.

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