



Informal Meeting of the IFAC Officers

Vienna/Laxenburg, Austria

4 - 6 April, 2013

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Austria, April 2013

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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 Verkehr, Innovation und Technologie ,BMVIT' gefördert.



Bundesministerium
für Verkehr,
Innovation und Technologie

In line with IFAC tradition for more than 30 years, the IFAC officers (President Ian Craig, President-Elect Janan Zaytoon, Past President Alberto Isidori, Treasurer Lino Guzzella, Vice-Presidents Roger Goodall and Iven Mareels) all travelled to Austria in the week after Easter for the annual informal meeting from 4-6 April 2013. This tradition stems from the time when international communication was significantly slower and more expensive, but continues today as not only is it often more productive to meet face-to-face but it is also an opportunity for IFAC to renew and strengthen its ties with Austria, the home of the permanent IFAC Secretariat, and the Austrian control engineering community.

As in the past years one of the IFAC officers presented a lecture at an Austrian university. The lecture was given to control students, professors, and invited guests at Vienna Technical University and this year was presented by IFAC President-Elect **Prof. Janan Zaytoon** of France. Special thanks goes to Prof. Andreas Kugi, editor of Control Engineering Practice, who has made the arrangements at the Technical University for this year, as well as for the several past years.

Fault Diagnosis of Discrete Event Systems ABSTRACT

Fault Diagnosis Methods of Discrete Event Systems has become a vibrant research area in recent years. The research activity in this area is driven by the needs of many different application domains such as manufacturing, process control, control systems, transportation, communication networks, software engineering, and others.

The aim of this presentation is to review the state-of-the art on methods and techniques for fault diagnosis of discrete event systems. Theoretical and practical issues related to model description tools, diagnosis processing structure, fault representation and inference will be discussed.

The President's Dinner was held on 4 April at the restaurant Le Salzgrüess in central Vienna. This gave the opportunity for current IFAC officers, as well as IFAC past presidents and current IFAC advisors Tibor Vámos (Hungary) and Vladimir Kucera (Czech Republic) to interact with Austrian officials and representatives from other international organizations located in Austria (IFIP and IIASA), as well as members of the Austrian control community.

The actual meeting started on 5 April and continued on 6 April.



Ian Craig

Formal decisions are not undertaken at the annual officers' meeting as it is a time to get updates, as well as plan for upcoming meetings and events. Topics included status reports from the officers, and the agenda and schedule for the 2013 Council and Related Meetings in Zurich, Switzerland in July, as well as updates about the World Congresses in Cape Town and Toulouse, and the ongoing Strategic Planning.

The 2014 Informal Meeting will be held from 25-27 April 2014, with the planning already underway.



IFAC Officers and Secretariat



FORTHCOMING EVENTS

2013
No. 3
June

Title	2013	Place	Further Information
American Control Conference (ACC 2013) in cooperation with IFAC	June 17 – 19	Washington, DC USA	http://a2c2.org/conferences/acc2013/
IFAC Conference Manufacturing Modelling, Management and Control (MIM 2013)	June 19 – 21	St. Petersburg Russian Fed.	http://mim2013.org/ e-mail: noc@mim2013.org
Asian Control Conference (ASCC 2013) in cooperation with IFAC	June 23 – 26	Istanbul Turkey	http://www.ascc.boun.edu.tr/ e-mail: ascc@boun.edu.tr
IFAC Symposium Intelligent Autonomous Vehicles IFAC-IAV 2013	June 26 – 28	Gold Coast City Australia	http://www.iav2013.org/ e-mail: l.vlacic@griffith.edu.au
IFAC Workshop Periodic Control Systems (PSYCO'2013)	July 03 – 05	Caen France	http://psyco-2013.sciencesconf.org/ e-mail: psyco-2013@sciencconf.org
IFAC Workshop Adaptation and Learning in Control and Signal Processing (ALCOSP 2013)	July 03 – 05	Caen France	http://alcosp-2013.sciencesconf.org/ e-mail: alcosp-2013@sciencconf.org
IEEE/IFAC Workshop Robot Motion and Control (RoMoCo 2013)	July 03 – 05	Warsaw Poland	http://romoco.put.poznan.pl e-mail: waldemar.wroblewski@put.poznan.pl
IFAC/IFORS/IMACS/IFIP Symposium Large Scale Complex Systems: Theory and Applications - 13th	July 07 – 10	Shanghai China	http://lss2013.sjtu.edu.cn e-mail: lss2013@sjtu.edu.cn
KEPCO/KSGA/IFAC/KPX Conference International Smart Grid Conference & Exhibition 2013	July 08 – 11	Jeju Republic of Korea	http:// not yet available e-mail: not yet available
IFAC Workshop Thermodynamic Foundations of Mathematical Systems Theory	July 14 – 16	Lyon France	http://www.lagep.univ-lyon1.fr/TFMST2013/ e-mail: TFMST2013@lagep.univ-lyon1.fr
European Control Conference (ECC 13) in cooperation with IFAC	July 17 – 19	Zurich Switzerland	http://www.ecc13.ch/ e-mail: secretariat@ecc13.ch
INSTICC/ IFAC Conference Informatics in Control, Automation and Robotics (ICINCO10th)	July 29 – 31	Reykjavik Iceland	http://www.icinco.org/ e-mail: icinco.secretariat@insticc.org
IFAC/IFIP/IFROS/IEA Symposium Analysis, Design, and Evaluation of Human-Machine Systems – HMS 2013	August 11 – 15	Las Vegas USA	http://www.cs.wright.edu/ifac/ e-mail: not yet available
IFAC Symposium Mining, Mineral and Metal Processing (MMM 2013)	August 25 – 27	San Diego, California USA	http://www.flogen.org/MMM2013/ e-mail: symposiums@flogen.org
IFAC Symposium Advances in Control Education ACE 2013	August 28 – 30	Sheffield UK	http://ace2013.group.shef.ac.uk/ e-mail: ace2013@shef.ac.uk
IFAC Conference Modelling and Control in Agriculture, - Horticulture and Post Harvest Industry (AGRICONTROL 2013)	August 28 – 30	Espoo Finland	http://agricontrol2013.automaatioseura.com/ e-mail: office@atu.fi
IFAC Symposium Automatic Control in Aerospace ACA 2013	September 02 – 06	Wuerzburg Germany	http://www7.informatik.uni-wuerzburg.de/aca2013 e-mail: aca2013@informatik.uni-wuerzburg.de
IFAC Conference Intelligent Control and Automation Science ICONS 2013	September 02 – 04	Chengdu China	http://risit.org/icons2013 e-mail: sec.icons@gmail.com
IFAC Symposium Nonlinear Control Systems - NOLCOS	September 04 – 06	Toulouse France	http://www.laas.fr/NOLCOS2013 e-mail: nolcos2013@laas.fr

FORTHCOMING EVENTS (ctd.)

IFAC Workshop Dependable Control of Discrete Systems (DCDS 4th)	September 04 – 06	York United Kingdom	http://dcds13.net.dcs.hull.ac.uk/ e-mail: not yet available
IFAC Symposium Advances in Automotive Control AAC 2013	September 04 – 07	Tokyo Japan	http://www.sice.or.jp/IFAC-AAC2013 e-mail: ifac-aac2013@c-linkage.co.jp
IFAC Workshop Enterprise Integration, Interoperability and Networking (co-sponsored)	September 11 – 12	Graz Austria	http://www.onthemove-conferences.org/index.php/ei2n2013
IFAC (ACM) Conference Management and Control of Production and Logistics – MCPL 2013	September 12 – 14	Fortaleza Brazil	http://www.cti.gov.br/mcpl2013/ e-mail: mcpl2013@cti.gov.br
IFAC Workshop Advances in Control and Automation Theory for Transportation Applications (ACATTA)	September 16 – 17	Istanbul Turkey	http://www.acatta13.itu.edu.tr/ e-mail: not yet available
IFAC Conference Control Applications in Marine Systems CAMS 9th 2013	September 18 – 20	Osaka Japan	http://cams2013.naoe.eng.osaka-u.ac.jp/ e-mail: not yet available
IFAC Workshop Distributed Estimation and Control in Networked Systems (NecSys 4th)	September 25 – 26	Koblenz Germany	http://www.necsys2013.rub.de e-mail: necsys2013@atp.rub.de
IFAC Conference Programmable Devices and Embedded Systems PDeS 2013	September 25 – 27	Velké Karlovice Czech Republic	http://pdcs-conference.eu e-mail: noc@pdcs-conference.eu
IFAC/IEEE/CSS Workshop Control of Systems Modeled by Partial Differential Equations (CPDE)	September 25 – 27	Paris France	http://www.cpde2013.fr/ e-mail: contact@cpde2013.fr
IFAC Symposium Telematics Application TA 3rd 2013	November 11 – 13	Seoul Republic of Korea	http://ta2013.yonsei.ac.kr/ e-mail: not yet available
IFAC Workshop 2nd RED-UAS 2013 (Research, Education and Development of Unmanned Aerial Systems)	November 20 – 22	Compiegne France	https://www.hds.utc.fr/reduas2013/doku.php e-mail: rlozano@hds.utc.fr
ESF/SIAM/IFAC Workshop Mathematical Control	December 03 – 06	Trieste Italy	http://mct.lsis.org e-mail: mct@lsis.org
IFAC Symposium Computer Applications in Biotechnology (CAB 2013)	December 16 – 18	Mumbai India	http://www.cab2013.org/ e-mail: cab2013@che.iitb.ac.in
IFAC Symposium Dynamics and Control of Process Systems (DYCOPS 2013)	December 18 – 20	Mumbai India	http://www.dycops2013.org/ e-mail: not yet available
Title	2014	Place	Further Information
IFAC Workshop Discrete Event Systems (WODES 2014)	May 14 – 16	Paris France	http://wodes2014.lurpa.ens-cachan.fr/ e-mail: jean-marc.fauere@lurpa.ens-cachan.fr
19th IFAC World Congress	August 25 – 29	Cape Town South Africa	http://www.ifac2014.org/ email: info@ifac2014.org
Title	2015	Place	Further Information
IFAC/IEEE/IFIP/IFORS Symposium Information Control Problems in Manufacturing – INCOM 2015	May 11 – 13	Ottawa Canada	http://incom2015.org/ e-mail: not yet available
IFAC Workshop Automatic Control in Offshore Oil and Gas Production	May 27 – 29	Florianopolis Brazil	http://not yet available e-mail: not yet available
IFAC Symposium Robust Control Design (ROCOND 2015)	July 08 – 11	Bratislava Slovakia	http://not yet available e-mail: not yet available
IFAC Symposium System Identification – SYSID 2015	October 19 – 21	Beijing China	http://not yet available e-mail: not yet available

System, Structure and Control SSC 2013
IFAC Symposium (5th) together with
Time Delay Systems
IFAC Workshop (11th)
and
Fractional Differentiation and its Applications
IFAC Workshop (6th)
Grenoble, France, 4 - 6 February 2013

The IFAC Symposium on System, Structure and Control (together with Time Delay Systems and Fractional Differentiation and its Applications) was held at the World Trade Center of Grenoble in France on 4-6 February 2013. It was organized by Gipsa-lab, a French research laboratory affiliated to the Grenoble Institute of Technology, Université Joseph Fourier Grenoble, Université Stendhal Grenoble and CNRS, under the auspices of the SEE (the French IFAC NMO) and of the GdR MACS (CNRS). It was sponsored by the IFAC Technical Committee 2.2 Linear Control Systems (Main-Sponsor), by TC2.1 (Control Design), TC2.3 (Non-Linear Control Systems), TC2.5 (Robust Control) and TC2.6 (Distributed Parameters Systems) as Co-Sponsors.

Let us recall that the IFAC Technical Committee 2.2 Linear Control Systems focuses on the study of dynamical systems and phenomena in which linearity plays a fundamental role. It fosters the development of tools, methods and approaches for analysis and synthesis of dynamical systems described by linear differential and/or difference equations, including finite-dimensional time-invariant and time-variant systems, infinite-dimensional systems, descriptor and singular systems, n-dimensional systems, systems with time-delays, positive systems, fractional systems, complex systems and variable structure systems. It promotes investigation of the structural properties which are related to linearity and the use of a control theoretic point of view in the solution of modeling, monitoring and control problems in engineering and other applied fields.

The IFAC Symposium on System, Structure and Control has been held every three years since 2001; it was before organized as an IFAC Workshop (1989 and 1992) and as an IFAC conference (1995 and 1998).

This event was also supported by the French Institutions and Research Bodies (Grenoble Institute of Technology, Université Joseph Fourier Grenoble, CNRS and INRIA) and by two Industrial Sponsors (SOBEN SAS, Cahors, France (Golden Sponsor) and MathWorks France (Silver Sponsor)).

A total of 221 submissions (182 regular papers and 39 invited session papers) were received; from among them, 60 papers were rejected and 4 were withdrawn from the technical program. This led us to include 157 papers (regular + invited) and 4 plenary contributions (authored by 469 authors from 36 countries) in the final program, organized in 4 plenary sessions, 6 invited sessions, 16 regular sessions and 1 interactive session on applications. A panel session on Control Education took also place. This event was organized in three parallel sessions: System, Structure and Control (SSC), Time Delay systems (TDS) and Fractional Differentiation and its Applications (FDA). We have then kept the advantage of small workshop events (they bring together researchers from a specific community during the whole conference), while providing a complete overview of the Linear Control Systems activities. About 170 participants from 29 countries attended the event; they enjoyed the technical program as well as the two social events (Wine & Cheese Welcome Reception and Conference Gala Dinner) which were organized in the center of Grenoble.

The four invited plenary lectures were presented by distinguished professors. The first lecture entitled “**Lyapunov and invariance methods in control design**” presented by **Professor Fran-**

co BLANCHINI (University of Udine, Italy) outlined techniques based on set invariance and Lyapunov theory for the control and analysis of dynamical systems from both a theoretical and practical standpoint. Several applications in important areas in control theory including constrained control, robust control, disturbance rejection, were described. The second plenary lecture entitled “**Model-based control of automotive engines and after-treatment devices**” was given by **Professor Nicolas PETIT (MINES ParisTech, France)** who outlined practical aspects, in the automotive industry, concerning the time reduction of design and tuning of all the intricate control loops during the development of a new engine or a new vehicle to shorten their global design cycle. The third plenary lecture entitled “**Modeling and control of Ionic Polymeric Metal Composite towards a novel fractional order capacitor**” was delivered by **Professor Riccardo CAPONETTO (Università degli Studi di Catania, Italy)**; it concerned IPMC (Ionic Polymeric Metal Composites) that are innovative materials made of an ionic polymeric membrane covered on both sides with a precious metal. The aim of this talk was to show the fractional modeling and fractional control research activities on IPMC actuators leading to models, integrators and derivators whose non integer orders are strictly related to some design parameters. The fourth plenary lecture entitled “**Input-to-State Stability of Nonlinear Functional Systems**” was given by **Professor Pierdomenico PEPE (University of L'Aquila, Italy)** who focused on theoretical aspects of the Lyapunov-Krasovskii characterization of the input-to-state stability (ISS) property for nonlinear systems described by retarded functional differential equations (RFDEs), continuous time difference equations (CTDEs) and neutral time functional differential equations (NFDEs).

The 6 invited sessions focused on the following issues: “Algebraic and Symbolic Methods in Mathematical Systems Theory”, “Control of Complex Systems: Structural Methods (Parts 1 and 2)”, “Variable Structure Systems: Sliding Mode Control and Observation”, “Nonlinear Time Delay Systems”, “Advances in Fractional Order Estimation and Control” and “Fault Diagnosis and Control Applications”. This last invited session was scheduled in the interactive session which permitted many fruitful exchanges and discussions, due to the possibility given to the participants to make real-time demos with PCs.

Organizing such an event was a challenge that could not have been achieved without the help of numerous people. We would like to thank specifically the IPC co-Chairs Marco Lovera, Emilia Fridman and José A. Tenreiro Machado who considerably contributed to the reviewing process and paper selection. Thanks also to the Publication Chair Emmanuel Witrant for editing the final program and the book of abstracts, and to the 84 members of the IPC that allowed a high paper selection with the help of more than 650 reviewers. We are also grateful to the administrative and technical staff of GIPSA-lab, involved in the NOC and who made this conference unforgettable for all the participants.

Finally, we thank all the authors, session organizers and chairs, and volunteers that made this IFAC event in Grenoble a great success.

Olivier Sename, General and NOC Chair
Luc Dugard, IPC Chair

Discrete Event Systems
(WODES)
IFAC Workshop (11th)
Guadalajara, Mexico
3 - 5 October 2012

The Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV) organized the 11th edition of WODES, which took place from 3-5 October 2012 in Guadalajara, Mexico.

In the program the following plenary talks were given by distinguished members of the Discrete Event Systems community: “**Some Perspectives and Challenges in the (Discrete) Control of Cellular Systems**”, by **Prof. Jose Eduardo Ribeiro Cury**, “**Optimal Control of Switched-Mode Dynamical Systems**”, by **Prof. Yorai Wardi**; and “**Discussion on the fault diagnosis methods of Discrete Event Systems**”, by **Prof. Janan Zaytoon**. In addition, in celebration of the 50th anniversary of the PhD defense of the late Carl Adam Petri, the talk “50 years after the Ph.D thesis of Carl Adam Petri: A perspective”, was presented by Prof. Manuel Silva.

The total number of submissions to WODES'12 was 87 and the papers were reviewed by the members of the IPC and external reviewers, both known and anonymous. The eleven papers submitted by the research groups of the IPC chairs' institutes were handled independently from the IPC chairs by two co-editors, Prof. Stephane Lafortune and Prof. Janan Zaytoon.

Among the 87 submitted papers, the IPC accepted 56 for presentation at the workshop after a careful review process where each paper received an average of more than three reviews. The contributions of invited speakers and the 56 accepted papers are included in the preprints. The 134 authors of the 56 accepted papers came from 19 countries, with the following distribution: 34.1 papers come from Europe, 8.2 from Latin America, 8.1 from US/Canada, 3.35 from Asia, 1.25 from Africa, and 1 from Oceania.

Some of the accepted papers have been submitted as a part of special sessions. All of these papers went through the normal review process. The organizers of these sessions have put into focus some interesting new research topics. Organizers and topics were: Hassane Alla and Carla Seatzu, “Approaches for the Analysis and Control of Petri nets”, Simona Sacone, “Discrete Event/Hybrid Models and Methods Applied to Transportation Systems Modeling and Control”, Jean-Louis Boimond and Laurent Hardouin, “Discrete Event Systems and Max-Plus Algebra”; and Rong Su, Samuel Qingshan Jia, and Jan Komenda, “Supervisory Control of Large Discrete-Event Systems Modeled by Automata”.

In this edition of WODES a Best Student Paper Award was established. The award was won by Anna-Lena Meyer, for the paper: “Discontinuity Induced Bifurcations in Timed Continuous Petri Nets.”

The attendees enjoyed nice weather during the workshop, as well as during the social events. The social events included a welcome reception, downtown walking and bus guided city tours of Guadalajara, as well as the gala dinner.

Ernesto López-Mellado
Antonio Ramirez-Treviño
CINVESTAV Unidad Guadalajara

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