

IFAC Newsletter

No. 6, December 2002

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Who is Who in IFAC

Message from the President



The International Federation of Automatic Control addresses professionals, theorists, engineers, researchers, students, or representatives of technical societies, who are involved in the broad field of Automatic Control.

IFAC is *the* worldwide organization dealing with Automatic Control theory, applications, education, and all of its technical and social implications. The membership of IFAC, based on the National Member Organizations, provides a truly international participation, preserving the local customs in the development of its activities. Individuals can participate in IFAC at different levels of involvement: as

Affiliates who receive the Newsletter; as Technical Committee Members through nomination either by the National Member Organization or by the Technical Committee Chair; as members of the International Program Committees of IFAC events; as authors of papers for IFAC events; as attendees of IFAC events; and, ultimately as officials of IFAC.

The exchange of ideas and results is among the main goals of IFAC. To pursue this goal, IFAC organizes high quality technical meetings and publishes some of the leading journals in the field of Automatic Control. Between 30 and 40 technical events per year, whose scheduling, scope, and ways of participation can be accessed through our webpage, are sponsored by one or more of the 39 IFAC Technical Committees. These events, as well as the Triennial World Congress, are technically monitored by International Program Committees, which subject draft papers to a rigorous reviewing process. The Proceedings of these meetings, where the contributions are presented and discussed, are published by Elsevier Science Ltd., and can be purchased for further reference.

A selection of contributions, following a further review, is published in *Automatica*, *Control Engineering Practice*, *Annual Reviews of Control*, *Journal of Process Control* or *Engineering Applications of Artificial Intelligence*, the five prestigious IFAC journals. Other excellent contributions, in more specialized fields, may be published in IFAC affiliated journals, usually in a revised or extended version.

Every three years, IFAC presents a number of awards. In addition to the best journal papers in *Automatica* and *Control Engineering Practice*, the best papers presented at the Congress in the area of applications, by a young author, or as a poster, are also awarded. To emphasize the relevance of education, the Harold Chestnut Control Engineering Textbook Prize is awarded. Life contributions, with a theoretical or practical focus, are distinguished by the Giorgio Quazza and Nathaniel Nichols IFAC medals. The Industrial Achievement Award, established in 2000, is presented to an individual, or a team of individuals, who has made a significant contribution to industrial applications of control. Long-term service to the Federation is recognized by the Outstanding Service Award or by the appointment as an IFAC Advisor.

The central technical role in IFAC is played by its Technical Board, which coordinates the activities of the Technical Committees and provides reports and summaries of the state of the art in each area. These internal documents are published, at the time of the Congress, as a reference for the Automatic Control community. The administrative and financial issues are managed by the Executive Board, which also prepares long-term IFAC policies and is in charge of publications and awards.

The IFAC Council conducts the day-to-day business of the Federation, having been empowered to do so by the General Assembly, which is composed of all National Member Organizations. The members of the Council, who can be recognized at IFAC meetings by their blue badges, may be approached to discuss any issue related to IFAC activities. The most important goal of IFAC is to serve all of you who are part of the large Automatic Control community.

The next IFAC Triennial World Congress will be held in Prague, Czech Republic, in July 2005. Plan now to participate. In the meantime, come to other IFAC events and/or contribute to our journals. Join a Technical Committee in the field of your expertise. Our aim is to offer you an excellent and at the same time enjoyable professional and personal relationship.

The IFAC Secretariat

The IFAC community knows a lot about how IFAC operates. You have all heard about the General Assembly, which takes place every three years, the last one having been held in Barcelona in the framework of the World Congress. You know about the Technical Board and its new structure, IFAC publications, IFAC awards and many other aspects of IFAC activities. Through the IFAC Newsletter, most of you are also acquainted with the persons who fulfil various functions within IFAC. The President, Vice-Presidents, Council members, Technical Board and Executive Board members, TC Chairs, award winners, etc. But very little, we believe, is known about the persons who do a lot of the administrative work within IFAC, i.e. the Secretary and the Secretariat team, although many of you have heard their names and corresponded with them via e-mail.

The IFAC Secretariat has had its permanent home in Laxenburg, Austria since 1978. Laxenburg is a market community of almost 3000 inhabitants, located about 20 km South of Vienna. Laxenburg looks back on a long and traditional history, having once been the summer residence of the Austrian emperors. Many buildings, including the palace as well as the park, which used to be hunting grounds for nobility in the past, bear witness to this history. Its idyllic location, as well as the vicinity to Vienna make it ideally suited for international organizations. In addition to IFAC, IIASA and IFIP have their offices in Laxenburg.



The building where the Secretariat is located

When the Secretariat moved to Laxenburg, Professor Fred Margulies was Secretary of IFAC. He was instrumental in establishing the Secretariat in Laxenburg. Already then, he was supported by Barbara Aumann who worked for IFAC even before the Secretariat moved to Austria. She was joined by Elfriede Schrott in 1980. In 1984 Fred Margulies was succeeded as Secretary by Gusztav Hencsey. Although resident in Budapest, Gusztav Hencsey travelled to Laxenburg every two weeks. Such "remote control" is possible when you have reliable

and independent staff members. In 1983 Elisabeth Löschinger became a member of the IFAC staff. The last addition to the IFAC staff happened in 1985, when Elfriede Schrott retired and Ernestine Rudas joined the team. Thus, the Laxenburg IFAC Secretariat staff has been together in this composition since 1985. In the course of all these years, the team has had to accomplish many changes, introducing, adapting and implementing all the new office technologies. Starting with electric typewriters and telexes, the first very complex, command-oriented computer was introduced in 1982, allowing the production of address labels and Newsletter envelopes as well as the first address lists of IFAC Officials. A quantum leap was the introduction of the first Apple Macintosh Computer with 20 MB storage capacity! Not much later the Secretariat could boast of the first fax machine and e-mail facility – of course without being able to attach documents at that time. Another great step forward was the new database with the keywords which allowed better service to Affiliates and event organizers alike. Also the IFAC Newsletter went electronic, with the first desktop publishing program. In the course of time computer capacity became bigger, the Secretariat changed from Macs to PCs, e-mailing started to replace “snail” mail and faxes almost completely. In the nineties, the first IFAC homepage went online. Today the Secretariat is equipped with the latest technology.

But let us not forget the human factor. It is Gusztav, Elisabeth, Barbara and Ernestine who make the whole thing really tick. They are not only colleagues, but also friends, something which is necessary if you work together so closely over the years. If the chemistry didn't fit, it would not be possible to have such good cooperation. Another important factor is continuity. Especially in a Federation where functions are held by different people every three years, it is essential to have some people who have known IFAC over many years. Thus a new official can always expect to have his or her questions answered or be pointed in the right direction, when turning to the Secretariat.

Gusztav Hencsey



Although a true Hungarian, Gusztav Hencsey was born in Zell am See, Austria. He studied in Budapest and at the Institute of Technology in Leningrad. In 1969 he joined the Hungarian Academy of Sciences. In 1975 he became Scientific Secretary of the Computer and Automation Research Institute of the Academy (MTA SZTAKI). In this function he organized many meetings, thus already coming into contact with IFAC. In 1984 he was NOC Chair of the IFAC World Congress in Budapest, at the time, when Tibor Vamos was President of IFAC. When a successor for Fred Margulies was sought as IFAC Secretary, Gusztav Hencsey was proposed to be elected in this function. Parallel to his work for IFAC, Gusztav Hencsey pursues his career as a Professional Congress Organizer, both for the Academy of Sciences and as independent entrepreneur. Gusztav is proud father of two grown daughters and one lively two-year old girl..

Barbara Aumann



Having finished commercial college, Barbara started her career with VOEST, one of the biggest steel producers worldwide. It was Fred Margulies who “discovered” her for IFAC. Thus, Barbara's professional career has been with IFAC over many years. There is hardly anyone who knows the workings of the Federation as well as she does. But her interests are far more comprehensive. One grown-up daughter and one almost grown-up son keep her busy, as do her horses and dog.

Ernestine Rudas



With a degree in translation and interpretation, Ernestine worked as a free-lance interpreter for several years. In this case it was Barbara, who had known her from earlier days, who thought of her as a possible successor to Elfriede Schrott, who was retiring at the time. As with Barbara, this was a good choice. Ernestine has been with the Federation ever since. Together with Barbara and under the “remote control” of Gusztav, she does most of the minutes and takes care of the Newsletter and other administrative tasks. Apart from her life within IFAC, she loves music and singing and is an enthusiastic traveller and bridge player. Hobbies she can pursue now that the children have flown the nest.

Elisabeth Löschinger



Having spent part of her childhood in Spain, Elisabeth is fluent in Spanish. Having finished school back in Austria, she worked for the customs authorities for several years. After a few years taking exclusive care of her meanwhile grown daughter she started working for IFAC. She takes care of many administrative matters and makes the Secretariat a home for Gusztav, Barbara and Ernestine as well as for those who come to visit. Her interests are widespread and, being a resident of Laxenburg, she is much involved in matters concerning the market community.

FORTHCOMING EVENTS

Status December 2002

Title	2003	Place	Further Information
IFAC Workshop Optical Systems	February 2 – 5	Breckenridge CO, USA	http://www.ohio.edu/noncredit/optical.htm e-mail: greenfes@ohio.edu
IMACS/IFAC Symposium Mathematical Modelling – 4 th MATHMOD	February 5 – 7	Vienna Austria	http://simtech.tuwien.ac.at/MATHMOD e-mail: inge.troch@tuwien.ac.at
IFAC Workshop Programmable Devices and Systems P D S-2003	February 11 – 13	Ostrava Czech Rep.	http://pds2003.vsb.cz e-mail: pds2003@vsb.cz
IFAC Workshop (2 nd) Lagrangian and Hamiltonian Methods in Nonlinear Control	April 3 – 5	Sevilla Spain	http://www.esi.us.es/lhmnlc03 e-mail: lhmnlc03@esi.us.es
IFAC Workshop 7 th Intelligent Manufacturing Systems IMS2003	April 6 – 8	Budapest Hungary	http://www.conferences.hu/IMS2003/ e-mail: ims2003@conferences.hu
IFAC Conference Intelligent Control Systems and Signal Processing – ICONS 2003	April 8 – 11	Faro Portugal	http://conferences.ptrede.com e-mail: icons03@ualg.pt
IFAC Workshop Guidance and Control of Underwater Vehicles	April 9 - 11	Newport UK	http://gcu2003.newport.ac.uk e-mail: geoff.roberts@newport.ac.uk
IFAC Workshop Real Time Programming	May 14 – 17	Lagow Poland	http://www.iie.uz.zgora.pl/wrtp03 e-mail: wrtp03@iie.uz.zgora.pl
American Control Conference - in co- operation with IFAC -	June 4 – 6	Denver CO, USA	http://acc2003.me.berkeley.edu/ e-mail: bequeb@rpi.edu
IFAC Symposium 5 th Fault Detection, Supervision and Safety of Technical Processes – SAFEPROCESS	June 9 – 11	Washington DC, USA	http://safeproc.gmu.edu e-mail: jgertler@gmu.edu
IFAC Symposium Power Plants and Power Systems 2003	June 9 - 11	Seoul Korea	http://ifacpps2003.org e-mail: ifacpps2003@insession.co.kr
IFAC Symposium 6 th Advances in Control Education - ACE 2003	June 16 -18	Oulu Finland	http://ntsat.oulu.fi e-mail: office@atu.fi
IFAC Conference Analysis and Design of Hybrid Systems - ADHS03	June 16 – 18	St. Malo France	http://www.supelec-rennes.fr/adhs03/ e-mail: adhs03@supelec-rennes.fr
IFAC Symposium Advanced Control of Chemical Processes - ADCHEM 2003	June 18 – 20	Hong Kong China	http://www.ust.hk/adchem2003 http://www.adchem2003.uni-stuttgart.de/ e-mail: adchem2003@ist.uni-stuttgart.de
XVII IMEKO WORLD CONGRESS Metrology in the 3 rd Millennium	June 22-27	Dubrovnik Croatia	http://www.imeko.org e-mail: imeko2003@hmd.hr
IFAC Symposium 4 th Robust Control Design – ROCOND 2003	June 25 – 27	Milan Italy	http://www.elet.polimi.it/ROCOND2003 e-mail: colaneri@elet.polimi.it
IFAC Workshop Automatic Systems for Building the Infrastructure in Developing Countries (Knowledge and Technology Transfer)	June 27 – 28	Istanbul Turkey	http://www.dogus.edu.tr/decom03 e-mail: decom03ifac@dogus.edu.tr
IFAC Workshop 12 th Control Applications of Optimization – CAO	June 30 July 2	Visegrad Hungary	http://www.conferences.hu/CAO2003/ e-mail: bars@aut.bme.hu
IFAC Workshop	July	Waterford	http://www.ihrt.tuwien.ac.at/swiis03

Technology and International Stability	3 – 5	Rep. of Ireland	e-mail: swiis@ihrt.tuwien.ac.at
IFAC Conference Fieldbus Systems and their Applications FeT 2003	July 7 - 8	Aveiro Portugal	http://www.det.ua.pt/eventos/fet2003 e-mail: jaf@det.ua.pt
IFAC Symposium Intelligent Components and Instruments for Control Applications – SICICA 2003	July 9 – 11	Aveiro Portugal	http://www.det.ua.pt/eventos/sicica2003 e-mail: sicica2003@det.ua.pt
IFAC Workshop Modelling and Analysis of Logic Controlled Dynamic Systems	July 30 August 1	Irkutsk Lake Baikal Russia	http://giscenter.icc.ru/ifacbaik/ e-mail: snv@icc.ru
IFAC Symposium 10 th Transportation Systems	August 4 - 6	Tokyo Japan	http://www.is.aist.go.jp/ifac-cts2003 e-mail: tsugawa.s@aist.go.jp
IFAC Symposium 5 th Modelling and Control in Biomedical Systems	August 21 – 23	Melbourne AUS	http://www.tourhosts.com.au/ifac2003 e-mail: ifac2003@tourhosts.com.au
IFAC Symposium 13 th System Identification – SYSID 2003	August 27 – 29	Rotterdam NL	http://sysid2003.nl e-mail: info@sysid2003.nl
IFAC Symposium 7 th Robot Control – SYROCO 2003	September 1 – 3	Wroclaw Poland	http://www.zpcir.ict.pwr.wroc.pl/syroco2003 e-mail: tchon@ict.pwr.wroc.pl
European Control Conference (in co-operation with IFAC)	September 1 – 4	Cambridge UK	http://conferences.iee.org/ECC03/ e-mail: jmm@eng.cam.ac.uk
IFAC Concerence Control Systems Design	September 7 – 10	Bratislava Slovakia	http://www.kasr.elf.stuba.sk/csd2003 e-mail: csd2003@kasr.elf.stuba.sk
IFAC Workshop Time Delay Systems	September 8 – 10	Rocquencourt France	http://www.inria.fr/tds03.html e-mail: tds03@inria.fr
IFAC Workshop Algorithms and Architectures for Real-Time Control – AARTC 2003	September 8 – 10	Sheffield UK	http://www.sheff.ac.uk/aartc-2003 e-mail: aartc-2003@sheffield.ac.uk
IFAC Conference 6 th Manoeuvring and Control of Marine Systems – MCMC 2003	September 17 - 19	Girona Spain	http://iiaa.udg.es/mcmc03 e-mail: mcmc03@iiaa.udg.es
IFAC Symposium 8 th Automated Systems Based on Human Skill – joint design of technology and organization	September 22 – 24	Gothenburg Sweden	http://www.davinci.chalmers.se/Ifac_2003 e-mail: johan.stahre@hfe.chalmers.se
IFAC Workshop Intelligent Assembly and Disassembly	October 9 – 11	Bucharest Romania	http://www.iad2003.com e-mail: iad03@icar.pub.ro
IFAC Workshop New Technologies for Automation of the Metallurgical Industry	October 11 – 13	Shanghai China	http://www.baosight.com/ifac03 e-mail: wangwei@dlut.edu.cn

Title	2004	Place	Further Information
IFAC Symposium Automatic Control in Aerospace	June 14 – 18	St. Petersburg Russia	http://aca2004.aanet.ru e-mail: aca2004@aanet.ru
IFAC Symposium Telematics Applications in Automation and Robotics – TA 2004	June 21 – 23	Helsinki Finland	http: not yet available e-mail: office@atu.fi
American Control Conference - in co-operation with IFAC -	June 30 July 2	Boston MA, USA	http://www.mie.uiuc.edu/acc2004/index.asp e-mail: speyer@seas.ucla.edu
IFAC Symposium Intelligent Autonomous Vehicles - IAV 2004	July 5 – 7	Lisbon Portugal	http://iav04.isr.ist.utl.pt e-mail: iav04@isr.ist.utl.pt
IFAC Conference Control Applications in Marine Systems - CAMS 2004	July 7 – 9	Ancona Italy	http://cams04.unian.it e-mail: cams04@unian.it

IFAC Workshops on - Adaptation and Learning in Control and Signal Processing – ALCOSP	August 30 -		http://www.contr.sd.keio.ac.jp/ifacws04/main.htm e-mail: katayama@amp.i.kyoto-u.ac.jp
- Periodic Control Systems – PSYCO	September 1	Yokohoma Japan	e-mail: sano@sd.keio.ac.jp
IFAC Symposium 6 th Nonlinear Control Systems	September 1 – 3	Stuttgart Germany	http://www.nolcos2004.uni-stuttgart.de e-mail: nolcos2004@ist.uni-stuttgart.de
IFAC Multitrack Conference Advanced Control Strategies for Social and Economic Systems	September 2 – 4	Vienna Austria	http://www.ihrt.tuwien.ac.at/acs04 e-mail: kopacek@ihrt.tuwien.ac.at
IFAC Symposium 11 th Automation in Mining, Mineral and Metal Processing – MMM 2004	September 8 – 10	Nancy France	http://www.cran.uhp-nancy.fr/ifac-mmm2004/ e-mail: mmm2004@cran.uhp-nancy.fr
IFAC Workshop 2 nd Advanced Fuzzy/Neural Control	September 16 – 17	Oulu Finland	http://www.ntsai.oulu.fi/ e-mail: office@atu.fi
IFAC Workshop Discrete Event Systems	September 22 – 24	Reims France	http://www.univ-reims.fr/wodes04 e-mail: wodes04@univ-reims.fr
IFAC Symposium System Structure and Control	December 8 – 10	Oaxaca Mexico	http://sssc04.cinvestav.mx e-mail: : jtorres@cinvestav.mx
Title	2005	Place	Further Information
American Control Conference - in co-operation with IFAC -	June 8 – 10	Portland OR USA	http://www.americancontrol.org/ not yet available e-mail: SJayasuriya@mengr.tamu.edu

Mechatronic Trains

Roger M. Goodall

Excerpt from the Preface to the Special Section of Control Engineering Practice, Volume 10, Issue 9 (2002)

For many years, the engineering discipline involved in designing railway vehicles has principally been mechanical engineering. Of course, electrical engineers have always been involved with the traction and power supply systems, and electronics/control engineers have had increasing dominance in these areas as power electronic drives have taken over from electro-mechanical control. However, these changes have only had a second-order effect upon the basic mechanical configuration and structure of the vehicles and the way they are formed into trains, which has remained the domain of the mechanical engineer.

Now, however, things are starting to change. Tilting trains have increasingly become a standard technology, firstly for high-speed trains and now for intermediate speed regional trains. In these trains, the suspension system in the roll direction is actively controlled-sensors, digital processors, data busses and actuators are involved in the way in which the vehicle responds to curves, enabling the vehicle to travel faster through the curves whilst providing the same level of comfort for the passengers. No longer in this aspect of the vehicle design exclusively the domain of the mechanical engineers-electronics, control and software engineers have become a key part of the design process, not only in a purely functional sense but also in terms of human factors, safety issues, etc.

The introduction of tilting trains has heralded the start of a new era of mechatronic trains. Active control of the suspension system on a train is very likely to become a critical future railway technology, perhaps as radical and far-reaching as the introduction of fly-by-wire flight control has become in the aircraft industry. This special section of Control Engineering Practice contains six papers that describe the state-of-the-art and in conjunction with a review paper recently published in CEP (Goodall & Kortüm, 2002) will provide the reader with a comprehensive overview of the concepts, possibilities and challenges. They will be of interest to a variety of people: The casual reader keeping abreast of industry developments, the control engineer wishing to identify techniques that might be transferable to their own problems, and the theoreticians looking for challenging examples to which their particular design approaches might be applied and evaluated.

Control Engineering Practice Papers from the September 2002 Issue

A New Approach to the Design of Mode Switching Control in Hard Disk Drive Servo Systems
(V. Venkataramanan, B.M. Chen, T.H. Lee, G. Guo)
Continuation Methods for Robust Controller Design for Plants with Operating-point-dependent Behaviour
(R. Bartholomäus)
Mixed H^2/H^∞ -infinite State-feedback Design for Microsatellite Attitude Control
(C.-D. Yang, Y.-P. Sun)
Towards Distributed Diagnosis of the Tennessee Eastman Process Benchmark
(J. Chen, J. Howell)

Special Section on Mechatronic Trains

Preface
(R.M. Goodall – Guest Editor)
An Active Suspension/Tilt System for a Mechatronic Railway Carriage
(X.Liu-Henke, J. Lückel, K.-P. Jäker)
Mechatronics in Japanese Rail Vehicles: Active and Semi-active Suspensions
(K. Tanifuji, S. Koizumi, R.-H. Shimamune)
Control Strategies for Active Steering of Bogie-based Railway Vehicles
(J. Pérez, J.M. Busturia, R.M. Goodall)
A New Concept for Integrated Guidance and Drive of Railway Running Gears
(M. Gretzschell, L. Bose)
Mechatronic Solutions for High-speed Railway Vehicles
(T.X. Bei, Z. Nagy, R.M. Goodall, A.H. Wickens)
Control of the NBP Linear Drive System
(M. Henke, H. Grotstollen)

Book Reviews
Conference Calendar

Papers from the October 2002 Issue

Periodic Active Control of Vibrations in Helicopters: A Gain-scheduled Multi-objective Approach
(S. Bittanti, F.A. Cuzzola)
Eigenstructure versus Optimal Control for Decoupling
(A.P. Oliva, W.C.L. Filho)
A Bilateral Control Scheme for 2-DOF Telemanipulators with Control Input Saturation
(S.H. Ahn, J.S. Yoon)
Novel Scheduling Policies in Real-time Multithread Control Systems Design
(P. Palopoli, L. Abeni, G. Bolognini, B. Allotta, F. Ponticelli)

Front-tracking Centralized Motor Control in a Paper-making Process
(L. Ferrarini, L. Piroddi)
Digital Rebalance Loop Design for a Dynamically Tuned Gyroscope Using H_2 Methodology
(J.W. Song, J.G. Lee, T. Kang)
Comparison of a Linear and Nonlinear Approach to Engine Misfires Detection
(M.R. Ilkivová, B.R. Ilkiv, T. Neuschl)
Control of a Cryogenic Process Using a Fuzzy PID Scheduler
(M. Santos, A.L. Dexter)
Time Delay Integrating Systems : A Challenge for Process Control Industries. A Practical Solution
(M. Huzmezan, W. A. Gough, G.A. Dumont, S. Kovac)

Conference Calendar

Journal of Process Control Papers from the July 2002 Issue

Robust self-tuning PID controller for nonlinear systems
(K.K. Tan, S. Huang, R. Ferdous)
Robust output feedback model predictive control using off-line linear matrix inequalities
(Z. Wan, M.V. Kothare)
Quadratic programming algorithms for large-scale model predictive control
(R.A. Bartlett, L.T. Biegler, J. Backstrom, V. Gopal)
Conditions for decentralized integral controllability
(J. Lee, T.F. Edgar)
Robust model-order reduction of complex biological processes
(T.T. Lee, F.Y. Wang, R.B. Newell)
The average-case identifiability and controllability of large scale systems
(E.L. Russell, R.D. Braatz)

Papers from the August 2002 Issue

Nonlinear modeling and adaptive fuzzy control of MCFC stack
(C. Shen, G.-Y. Cao, X.-J. Zhu, X.-J. Sun)
A new subspace identification approach based on principal component analysis
(J. Wang, S.J. Qin)
A simple graphic approach for observer decomposition
(C.-T. Chang, Y.-C. Lin, C. Georgakis)
Generalized predictive control for non-uniformly sampled systems
(J. Sheng, T. Chen, S.L. Shah)
Performance comparison between PID and dead-time compensating controllers
(A. Ingimundarson, T. Hagglund)
A friction compensator for pneumatic control valves
(T. Hagglund)

Confirmation of Affiliate Registration

Reminder - Reminder – Reminder

By returning the questionnaire published in the last issue of the IFAC Newsletter, your Affiliate Membership and thus all related benefits such as free subscription to the IFAC Newsletter will be confirmed.

Should the last Newsletter not have reached you for any reason, you can download it also from the IFAC homepage at

www.ifac-control.org

and/or send the confirmation to the IFAC Secretariat directly from there.

Reminder - Reminder - Reminder

Automatica Papers from the November 2002 Issue

Editorial

Automatica Prize Paper Awards 2002

K. Furuta

Papers

Controllability of a Class of Underactuated Mechanical Systems with Symmetry
(V. Manikonda, P.S. Krishnaprasad)
Identification of Finite Dimensional Models of Infinite Dimensional Dynamical Systems
(D. Coca, S.A. Billings)
Robust Optimal Design and Convergence Properties Analysis of Iterative Learning Control Approaches
(J.-X. Xu, Y. Tan)
Drive Torque Actuation in Active Surge Control of Centrifugal Compressors
(J.T. Gravdahl, O. Egeland, S.O. Vatland)
Solution of a Non-convex Optimization Arising in PI/PID Control Design
(C. Hwang, C.-Y. Hslao)
Switching Between Stabilizing Controllers
(J.P. Hespanha, A.S. Morse)

Brief Papers

Robust Output Tracking for Uncertain/Nonlinear Systems Subject to Almost Constant Disturbances
(A.B. Acikmese, M. Corless)
Converting Chaos into Periodic Motion by State Feedback Control
(C. Cal, Z. Xu, W. Xu)
On Optimal Control of a Class of Partially Observed Discrete Event Systems
(H. Marchand, O. Boivineau, S. Lafortune)
Input-to-state Stability for a Class of Lurie Systems
(M. Arcak, A. Teel)
Use of Integrator in Nonlinear H-infinite Design for Disturbance Rejection
(S.W. Su, B.D.O. Anderson, T.S. Brinsmead)
A Gradient Flow Approach to On-line Robust Pole Assignment for Synthesizing Output Feedback Control Systems
(S. Hu, J. Wang)
On Modal Consistency in Compartmental Systems Identification
(L. Benvenuti, A. De Santis, L. Farina)
Robot Discrete Adaptive Control Based on Dynamic Inversion Using Dynamical Neural Networks
(F.-C. Sun, H.-X. Li, L. Li)
Performance Gain Margins of the Two-stage LQ Reliable Control
(C.-S. Hsieh)
Minimax Control for Discrete-time Time-varying Stochastic Systems
(X. Guo, W. Yu, X. Li)
A New Lyapunov Design Approach for Nonlinear Systems Based on Zubov's Method
(S. Džurđević, N. Kazantzis)

Technical Communiques

Null Controllable Region of LTI Discrete-time Systems with Input Saturation
(T. Hu, D.E. Miller, L. Qiu)
Absolute Stability Criteria with Prescribed Decay Rate for Finite-dimensional and Delay Systems
(P.-A. Bliman)
Recursive Identification of Nonlinear Plants Operating in Closed Loop Using Kernel Representations
(F. De Bruyne, B.D.O. Anderson, I.D. Landau)

Book Reviews

Functional Adaptive Control – An Intelligent Systems Approach, by S.G. Fabri and V. Kadiramanathan
(F.M. Pait)
Non-linear Control for Underactuated Mechanical Systems, by I. Fantoni and R. Lozano
(L. Menini)
Computer Control Systems. Analysis and Design with Process-oriented Models, by E. Rosenwasser and B. Lampo
(A. Ghulchak, H. Sandberg)
Robust Control Design Using H-infinite Methods, by I.R. Petersen
(R.S. Sanchez-Pena)

Papers from the December 2002 Issue

Papers

Quantifying the Accuracy of Hammerstein Model Estimation
(B. Ninness, S. Gibson)
Stabilizing Underwater Vehicle Motion Using Internal Rotors
(C.A. Woolsey, N.E. Leonard)
Nonlinear Tracking Control in the Presence of State and Control Constraints: A Generalized Reference Governor
(E. Gilbert, L. Kolmanovsky)

Brief Papers

Robust Decentralized Stabilization for a Class of Large-scale Time-delay Uncertain Impulsive Dynamical Systems

(Z.-H. Guans, G. Chen, X. Yu, Y. Qin)
 Some Applications of Randomized Algorithms for Control System Design
 (V.V. Patel, G. Deodhare, T. Viswanath)
 Constrained Receding Horizon Predictive Control for Nonlinear Systems
 (Y.I. Lee, B. Kouvaritakis, M. Cannon)
 Repetitive Control for Systems with Uncertain Period-time
 (M. Steinbuch)
 Controller Performance Benchmarking and Tuning Using Generalized Minimum Variance Control
 (M.J. Grimble)
 Numerically Reliable Design for Proportional and Derivative State-feedback Decoupling Controller
 (D. Chu, M. Malabre)
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WHO IS WHO IN IFAC

Lino Guzzella - IFAC Treasurer



Lino Guzzella has been a full Professor of Thermotronics at the Swiss Federal Institute of Technology (ETH), Zurich, Switzerland since 1999. He currently heads the Department of Mechanical and Process Engineering (D-MAVT).

Born in Zurich on 13 October 1957, Lino Guzzella received his Mechanical Engineering Diploma from the same Department of ETH in 1981. He obtained his doctoral degree with a dissertation on nonlinear control methods in 1986. After that he worked from 1987 to 1989 with Sulzer Brothers, Winterthur, in the R&D department, where he was responsible for a group dealing with modeling and control problems in several industrial projects. From 1989 to 1991 he was with the electrical engineering department at ETH as an assistant professor for automatic control. After that he entered Hilti AG, Schaan, where he led the company's R&D mechatronics department.

Prof. Guzzella was appointed Assistant Professor of Engine Electronics at the Energy Technology Laboratory of ETH in 1993. Upon his promotion to Associate Professor in 1996, he founded the Engine Systems Laboratory which, in October 2000, was integrated into the Measurement and Control Laboratory, all within the Department of Mechanical and Process Engineering.

His current research interests include the modeling, control, and model-based optimization of mechatronic and energy systems using nonlinear and hybrid approaches. The primary aim of his research group is to contribute towards the reduction of fuel consumption and of emissions of engine systems. Ongoing research projects sponsored by major companies in the automotive industry include:

- development of control strategies for down-sized and supercharged IC engines
- real-time prediction and feedback control of engine emissions
- application of novel sensors for the engine management
- modelling and control of compressed natural gas engines
- total energy flow optimization in passenger cars
- modeling and control of gasoline-to-hydrogen reformers and fuel cells
- optimal causal and predictive driving strategies for hybrid cars.

In teaching, Lino Guzzella is especially interested in fostering team-based and project-oriented learning and teaching techniques.

Lino Guzzella is married and has two children.

At the IFAC Congress in Barcelona, July 2002, Lino Guzzella was elected to the position of IFAC Treasurer, thus succeeding Professor Walter Schaufelberger in this very important function.

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