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International Federation of Automatic Control

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Newsletter

Contents:

IFAC Council- and Related Meetings 2003
in conjunction with the 13th IFAC
Symposium on System Identification
The Netherlands, August 2003

*

Visits to the IFAC Secretariat

*

Intelligent Control and Signal
Processing – ICONS 2003
IFAC Conference, Portugal, April 2003

*

Control Applications of Optimization
IFAC Workshop, Hungary,
June/July 2003

*

Forthcoming Events

*

Lagrangian and Hamiltonian Methods
for Nonlinear Control – LHMNLC'03
IFAC Workshop, Spain, April 2003

*

Papers from Control Engineering
Practice, Nos 7 & 8, 2003

*

Papers from Automatica
Nos 7, 8 & 9, 2003

*

Who is Who in IFAC

IFAC Council- and Related Meetings 2003

Rotterdam, The Netherlands, August 26 – 20, 2003

This year, the IFAC- Council and Related Meeting will be held in in Rotterdam, The Netherlands, from August 26 till August 30, 2003, conjunction with the

13th IF AC Symposium on System Identification, SYSID-2003

August 27 – 29, 2003

SYSID is organized every three years. This will be the first SYSID symposium in the 3rd millenium and the second SYSID symposium to take place in The Netherlands.

The symposium covers all major aspects of system identification, experimental modelling, signal processing and adaptive control from theoretical and methodological developments to practical applications in a wide range of application areas. The aim of the meeting is to promote the research activities and the cooperation between researchers in these areas. To enhance the applications and industrial perspective of the symposium, participation from industrial authors is particularly encouraged.



This will be the first Council meeting after the World Congress in Barcelona last year. The year that has passed has been very active indeed.

Following the restructuring of the Technical Board which was endorsed in Barcelona, the 39 Technical Committees within the Technical Board have taken up their work and, after a year, we may say that work is proceeding very smoothly and a lot of activities are going on which will be reported on in greater detail after the meeting of the Technical Board in Rotterdam. The scopes of all these 39 Technical Committees have been revised and were published in Issue 1, 2003 of the IFAC Newsletter, which was published on the web. Shortly a document for download with all the scopes will be available on the web.

20 IFAC main-sponsored or co-sponsored events have been held since the World Congress in Barcelona in July 2002. From now until 2006 46 events have already been approved. In addition to this, many applications for events have been filed and are now undergoing the approval process. It can be said that problems with events are very rarely

encountered. The outbreak of SARS has only had the consequence that 2 events were postponed to a later date.

On the administrative side of IFAC a lot has also been going on. The new Treasurer has taken up his job. As all his predecessors, he comes from Switzerland and carries out his job in the same highly experienced manner as they did. Just a word on IFAC finances: Although membership fees in IFAC through the National Member Organizations are very reasonable, IFAC's financial situation is very stable and good. This is largely due to the careful management of funds through the Treasury but also to the "lean management" of IFAC. Contrary to most organizations, the administrative costs are very moderate, since practically all offices – from President to Technical Committee Chairs – are voluntary and unpaid, without reimbursement of costs for travelling even. The major cost factor – even if low compared to other organizations – is the Secretariat in Laxenburg and its staff. This staff is highly professional and efficient and has been with IFAC for many years.

IFAC Conference

Faro, Portugal, 8 – 11 April 2003

As always after a triennium, also the Affiliate database was revised. This opportunity was used to develop a completely new database for the IFAC Secretariat and the IFAC Homepage alike. It was quite a difficult task to design such a database, which meets the requirements of administration and the outside world. At the same time, the IFAC Homepage was transferred to a server of the Austrian Academy of Sciences, which, together with a professional developer, is supporting the Secretariat team in Laxenburg. The IFAC website was redesigned, using the basic design originally developed and maintained by the Spanish webmasters. It can now be directly serviced by the Secretariat staff together with the team of professionals. The Homepage address remains the same – www.ifac-control.org. Any comments, praise, criticism, suggestions about the Homepage are welcome. Just send an e-mail to the IFAC Secretariat at secr@ifac.co.at. The IFAC Homepage is considered “work in progress” and we are always ready to implement new ideas and make improvements or to eliminate mistakes.

At the Council meeting in Rotterdam all past developments will be analyzed and the future direction of the Federation will be discussed in detail. It is important to preserve what was good about the past and to change and adapt to future requirements at the same time. This will also be done by the preparations already going on for the 50th anniversary of IFAC in 2006. The activities planned for that occasion will both reflect the past and focus on the future of automatic control.

Gusztav Hencsey, Secretary

Visits to the IFAC Secretariat

This spring, the members of the IFAC Secretariat could welcome several guests at the office.

Council member Prof. Sirkka-Liisa Jämsä Jounela (Finland) was invited to give a guest lecture at the 20th anniversary of the Austrian IFAC Beirut. She used this opportunity to visit the IFAC Secretariat the following day to see how the administrative work of IFAC is handled. This same anniversary celebration was attended by former IFAC President and Advisor Tibor Vámos, who addressed the participants and outlined the links between IFAC and the Austrian scientific community.

Another visitor at the IFAC office was Council member Prof. Ian Craig (South Africa) who used the opportunity of a stopover in Vienna to learn how the administrative side of IFAC operates.

In spring also, Prof. Alexander Kurzhanski from the Russian NMO paid a visit to the IFAC Secretariat, to discuss the cooperation and interaction of the Russian NMO with IFAC.

The members of the IFAC Secretariat are always pleased to welcome visitors from the IFAC community. This allows them to meet the people who dedicate much time to voluntary work within IFAC and gives IFAC volunteers an opportunity to see the faces and meet the persons behind the many e-mails and other communications they get. It should also not be forgotten that the Secretariat is the home of a large archival collection of all IFAC events publications, going back to the beginnings of the Federation.

The Portuguese National Member Organization (APCA) and the Centre for Intelligent Systems (CSI) hosted this Conference, which was held at the University of Algarve, Faro, Portugal.

Within IFAC, the topics covered in this Conference had previously been addressed in several different Workshops, Symposia and Conferences. Until now, however, there had been no IFAC event specifically devoted to this important technical area, although the IFAC Workshop on Advanced Fuzzy/Neural Control held in Valencia in 2001, had covered some of these topics and demonstrated the high level of interest within the IFAC community. In accordance with the reorganization of the IFAC Technical Committees that took place at the Barcelona IFAC World Congress, held last year, the recently founded IFAC Technical Committee on Cognition and Control was the main sponsor of this new IFAC Conference. Recognizing the importance of “soft-computing” techniques for fields covered by other IFAC Technical Committees, this was a multi-track Conference, co-sponsored by four additional Technical Committees: Computers for Control, Optimal Control, Control in Agriculture, and Modelling, Identification and Signal Processing.

Being a forum to bring together experts and practitioners from the major soft-computing themes, and from control systems, signal processing, optimization and statistics, both from theory and applications, ICONS 2003 was also co-sponsored by some other important organizations in the field, such as the Institute of Electrical and Electronic Engineers (IEEE): Control Systems Society (CSS), Engineering in Medicine and Biology Society (EMB), and was held in cooperation with the Neural Networks Society (NNS); the International Fuzzy Systems Association (IFSA); and had the support of the European Network of Excellence in Evolutionary Computation (EvoNet).

Full draft papers were invited, and special sessions proposals were encouraged. Subsequently, all submitted papers were subject to three separate reviews. We were delighted with the quality of the 157 contributions received and it proved difficult to select the 98 papers that constituted the final program.

In the end, the ICONS Technical Programme consisted of 24 oral and 2 poster sessions, covering both important theoretical aspects of soft-computing methods, as well as their applications in control, modelling, identification, signal processing, robotics, medical, automation, fault management and general industrial applications. The assignment between poster and oral sessions was performed with the single view of producing a consistent program, meaning that no value ranking was taken into account in this classification. The programme also included six plenary lectures given by leading experts in the field, Professors Jacek Zurada, Marco Dorigo, Toshio Fukuda, Laszlo Kóczy, Frank Lewis and José Principe. As ICONS was co-located with the Second International Conference on Evolutionary Multi-Criterion Optimization (EMO 2003), the ICONS Technical Program also included two plenary speakers from EMO, Professors Peter Korhonen and David Schaffer. The ICONS 2003 Technical Program ended with a Panel Discussion, on Intelligent Control: Experiences and Future Directions, chaired by Prof. Peter Fleming, and with the participation of five of the Plenary Lecturers.

Unfortunately, due to the SARS epidemic, and the conflict in Iraq, 14 accepted papers could not be presented. In all, 84 contributed papers were presented during the 4 days of Conference, together with 8 plenary papers. This was a highly successful Conference that stimulated much discussion and debate within the sessions, during the breaks and at the social events, which helped to reinforce the strength of the emerging ICONS community. Its co-location with EMO 2003 was an added bonus for delegates who benefited from contacts with that related community.

António E. Ruano
NOC Chairman

Peter J Fleming
IPC Chairman

Control Applications of
Optimisation
IFAC Workshop

Visegrád, Hungary, June 30 – July 2, 2003

The 12th IFAC workshop on Control Applications of Optimisation was organised by the MTA-SZTAKI - Computer and Automation Research Institute of the Hungarian Academy of Sciences and by the Department of Automation and Applied Informatics and the School of Mathematics of the Budapest University of Technology and Economics.

It was sponsored by the TC on Optimal Control and co-sponsored by the TCs on Adaptive Control & Learning, Chemical Process Control, Control Design and Modelling & Control of Economic Systems.

51 participants coming from 18 countries had the possibility to listen to 3 survey lectures, one invited session (6 papers) as well as to 36 contributed presentations ranged in 8 regular sessions. The survey lectures covered the following important topics which are in the front of interest:

Optimisation problems in model – based diagnosis, presented by J. Gertler, USA,
Dynamic game theory – modeling international and national economic strategic interactions presented by R. Neck, Austria, and
What happens when certainty equivalence is not valid? Is there an optimal estimator for terminal guidance? presented by J. Shinar, Israel.

The regular sessions covered the following interesting areas:

Optimal control
Identification and fault detection
Systems and robust control
Economic applications of control and optimisation (I, II)
Systems and robust control
Differential games and optimal navigation
Intelligent systems
Industrial applications.

The invited session was devoted to economic applications of control and optimisation.

R. Bars
IPC Chair

E. Gyurkovics
NOC Chair

Lagrangian and Hamiltonian Methods for Nonlinear Control of LHMNLC'03

IFAC Workshop

Seville, Spain, April 3 – 5, 2003

The second IFAC Workshop on Lagrangian and Hamiltonian Methods for Nonlinear Control was held in Seville, Spain (April 3 – 5, 2003). The workshop was sponsored by the IFAC Technical Committee on Nonlinear Systems and co-sponsored by the IEEE CSS Technical Committee on Nonlinear Systems and Control. The aim of the workshop, similar to the one of its predecessor, was to present new approaches to nonlinear control that exploit the structure and the properties of mechanical and electromechanical systems, namely the Lagrangian and Hamiltonian structures. In particular, the workshop presented new developments in nonlinear control theory, design methods and applications where techniques have been effectively tailored to exploit the Lagrangian of Hamiltonian structure.

The workshop brought together 67 specialists from 13 different countries.

5 plenary presentation and 44 regular papers, in two parallel sessions, have been presented. The plenary presentations covered a range of important topics, such as trajectory generation and design, modeling of complex interconnected systems, control of systems with constraints, quantum control, and stabilization. The regular papers covered a wide range of topics, including optimal control; quantum control; modeling and control of electromechanical systems; use of symplectic, Poisson and Dirac structures in control; tracking and regulation; infinite dimensional Lagrangian and Hamiltonian systems; systems with delays and transmission lines.

The proceeding volume, now under preparation at Elsevier, will contain all contributed papers and plenary talks.

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Control Engineering Practice



A Journal of IFAC the International
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Papers from the July 2003 Issue

Grouped Neural Network Model-predictive Control
(J. Ou, R.R. Rhinehart)
A Survey of Industrial Model Predictive Control
Technology
(S.J. Qin, T.A. Badgwell)
Multi-model Predictive Control of an Industrial C3/
C4 Splitter
(C.R. Porfirio, E.A. Neto, D. Odloak)
Multivariable Control of the Longitudinal and
Lateral Dynamics of a Fly-by-wire Helicopter
(D.J. Walker)
Buffered DDA Command Generation in a CNC
(Y.-F. Chang)
Supervisory Control for a Telerobotic System:
A Hybrid Control Approach
(G.E. Garcia, R. Carelli, J.F. Postigo, C. Soria)
Zero-miss-distance Guidance Law Based on Line-
of-sight Rate Measurement Only
(P. Gurfil)

Papers from the August 2003 Issue

Special Issue on
Process Dynamics and Control
Volume 11, Issue 8, (August 2003)

Preface

Special Issue on Process Dynamics and Control
(Jay H. Lee, S. Joe Qin and Ensop Yoon)
Designing Plant Experiments for Real-time
Optimization Systems
(Wai San Yip and Thomas E. Marlin)
Challenging Control Problems and Emerging
Technologies in Enterprise Optimization
(Joseph Z. Lu)
On the Operability of Continuous Processes
(Christos Georgakis, Derya Uzturk, Sivakumar
Subramanian and David R. Vinson)
Automation of the Safety Analysis of Batch
Processes Based on Multi-modeling Approach
(Byoungwan Kang, Dongil Shin and En Sup Yoon)
Periodical Replanning with Hierarchical Repairing
for the Optimal Operation of a Utility Plant
(Heui-Seok Yi, Jeong Hwan Kim, Chonghun Han,
Jae Hak Jung, Moon Yong Lee and
Jie Tae Lee)
Structural Analysis of Large-scale Systems for
Distributed State Estimation and Control
Applications
(Rajanikanth Vadigepalli and Francis J. Doyle III)
A New Approach to Defining a Dynamic Relative
Gain
(Thomas Mc Avoy, Yaman Arkun, Rong Chen,
Derek Robinson and P. David Schnelle)
Nonlinear Control of a Reactive Distillation
Column
(S. Gruner, K.-D. Mohl, A. Kienle, E. D. Gilles,
G. Fernholz and M. Friedrich)
Inferential Control of Distillation Compositions:
Selection of Model and Control Configuration
(Manabu Kano, Natthaphon Showchaiya, Shinji
Hasebe and Iori Hashimoto)
Pseudo-random Binary Sequence Design for Finite
Impulse Response Identification
(Su Whan Sung and Jay H. Lee)

Neural Network-based Identification of SMB
Chromatographic Processes
(Chaoyong Wang, Karsten-Ulrich Klatt, Guido
Dunnebier, Sebastian Engell and
Felix Hanisch)
Multivariable Identification of an Activated Sludge
Process with Subspace-based Algorithms
(Oscar A. Z. Sotomayor, Song Won Park and
Claudio Garcia)
Erratum to "A Flexible Architecture for
Telem manipulator Control" [Control Eng. Practice
10 (2002) 1293-1299], Page 971
(A. Weber, H. Breitwieser and J. Benner)

automatica

A Journal of IFAC the International
Federation of Automatic Control

Papers from the July 2003 Issue

Survey Paper

Generic Properties and Control of Linear Structured
Systems: A Survey
(J.-M. Dion, C. Commault, J. van der Woude)

Papers

A differential Game of Retailer Promotions
(S. Jorgensen, G. Zaccour)
Individual Cylinder Characteristic Estimation for
a Spark Injection Engine
(L. Benvenuti, M.D. Di Benedetto, S. Di Gennaro,
A. Sangiovanni-Vincentelli)
A General Technique for Deriving Analytical
Structure of Fuzzy Controllers Using Arbitrary
Trapezoidal Input Fuzzy Sets and Zadeh AND
Operator
(H. Ying)

Brief Papers

Robust H-Infinite Filtering with Error Variance
Constraints for Discrete Time-varying Systems with
Uncertainty
(Y.S. Hung, F. Yang)
Sonar-based Robot Navigation Using Nonlinear
Robust Observers
(E. Delgado, A. Barreiro)
A Parametric Optimization Approach to H-infinite
and H₂ Strong Stabilization
(D.U. Campos-Delgado, K. Zhou)
A Dynamic Fuzzy Model for a Drum-boiler-turbine
System
(H. Habbi, M. Zemat, B.O. Bouamama)
Limiting Performance of Optimal Linear Discrete
Filters
(L.B. Jemaa, E.J. Davison)
Fault-accommodation with Intelligent Sensors
(G. Tortora, B. Kouvaritakis, D. Clarke)
Stability Analysis of Discrete-time Systems with
Actuator Saturation by a Saturation-dependent
Lyapunov Function
(Y.-Y. Cao, Z. Lin)
A Transformation Approach for Solving the
Hamilton-Jacobi-Bellman Equation in H₂
Deterministic and Stochastic Optimal Control of
Affine Nonlinear Systems
(M.D.S. Aliyu)
Lyapunov-based Adaptive Control of MIMO
Systems
(R.R. Costa, L. Hsu, A.K. Imai, P. Kokotovic)
Backstepping for Nonsmooth Systems
(H.G. Tanner, K.J. Kyriakopoulos)
Fast Approximate Identification of Nonlinear
Systems
(J. Schoukens, J.G. Nemeth, P. Crama, Y. Rolain,
R. Pintelon)

Recurrent Neural Block Form Control
(E.N. Sanchez, A.G. Loukianov, R. A. Felix)
Adaptive Extremum Seeking Control of
Nonlinear Dynamic Systems with Parametric
Uncertainties
(M. Guay T. Zhang)
Nonlinear Model-state Feedback Control for
Nonminimum-phase Processes
(M.P. Niemiec, C. Kravaris)

Technical Communiques

A Frequency Domain Approach to Fault
Detection in Sampled-data Systems
(P. Zhang, S.X. Ding, G.Z. Wang, D.H. Zhou)
Robust Stability Analysis of Simple Systems
Controlled over Communication Networks
(Q.-C. Zhong)

Book Reviews

Neural and Adaptive Systems: Fundamentals
Through Simulations, by J.C. Principe,
N.R. Euliano and W.C. Lefebvre
(S. Mukhopadhyay)
Iterative Dynamic Programming, by R. Luus
(J. Chudoung)
Advances in Aircraft Flight Control, by
M.B. Tischler
(A. Sparks)
Control of Complex Systems, by K.J. Aström,
P. Albertos, M. Blanke, A. Isidori,
W. Schauffelberger and R. Sanz
(Z.-P. Jiang)

Papers from the August 2003 Issue

Papers

Probabilistic Design of LPV Control Systems
(Y. Fujisaki, F. Dabbene, R. Tempo)
Stability of Markov Modulated Discrete-time
Dynamic Systems
(G. Yin, Q. Zhang)
Linear Mechanical Systems and Dyadic Transfer
Function Matrices
(J. Anthonis, H. Ramon)
Boundary Feedback Control in Networks of Open
Channels
(J. de Halleux, C. Prieur, J.-M. Coron,
B. d'Andréa-Novet, G. Bastin)
Scheduled Controllers for Linear Systems with
Bounded Actuators
(I.Emre Köse, F. Jabbari)

Brief Papers

Unknown Disturbance Inputs Estimation Based
on a State Functional Observer Design
(Y. Xiong, M. Saif)
Controlled Linear System with Delayed Relay
Output under Impulse Random Disturbances
(P.-A. Bliman, A.B. Plunovskiy, M. Sorine)
A Phase-plane Approach to Time-optimal
Control of Single DOF Mechanical Systems with
Friction
(D.-S. Choi, S.-J. Kim, I.-J. Ha)
Polynomial Approach to the Control of SISO
Periodic Systems Subject to Input Constraint
(P. Colaneri, V. Kucera, S. Longhi)
Energy-based Control for Hybrid Port-
controlled Hamiltonian Systems
(W.M. Haddad, S.G. Nersesov, V. Chelloboina)
Generalized Hamiltonian Realization of Time-
invariant Nonlinear Systems
(Yuzhen Wang, Chunwen Li, Daizhan Cheng)
Simultaneous Model Matching and Disturbance
Rejections with Stability by State Feedback
(J.A. Torres Munoz, M. Malabre)
Adaptive Stabilization of Uncertain
Nonholonomic Systems by State and Output
Feedback
(S.S. Ge, Z. Wang, T.H. Lee)
Semi-intrusive Multivariable Model Invalidation
(L.G. Kammer, D. Gorinevsky, G.A. Dumont)
An Application of Dynamic Nash Task
Assignment Strategies to Multi-team Military
Air Operations
(Y. Liu, M.A. Simaan, J.B. Cruz, Jr.)

Positive Polynomial Matrices and Improved LMI
Robustness Conditions
(D. Henrion, D. Arzeller, D. Peaucelle)
On the H-infinite Fixed-lag Smoothing: How to
Exploit the Information Preview
(L. Mirkin)

Book Reviews

Computational Aspects of Linear Control, by
C. Brezinski
(E. Zeheb)
Methods of Algebraic Geometry in Control
Theory. Part II: Multivariable Linear Systems
and Projective Algebraic Geometry, by P. Falb
(G. Conte)

Papers from the September 2003 Issue

Papers

Adaptive Neural Network Control of Tendon-
driven Mechanisms with Elastic Tendons
(H. Kobayashi, R. Ozawa)
Frequency Domain Identification of Wiener
Models
(E.-W. Bai)
Nonlinear H-infinite Control of Nonsmooth
Time-varying Systems with Application to Friction
Mechanical Manipulators
(L.T. Aguilar, Y. Orlov, L. Acho)
Hybrid Feedback Stabilization of Systems with
Quantized Signals
(D. Liberzon)
Internal Model Based Tracking and Disturbance
Rejection for Stable Well-posed Systems
(R. Rebarber, G. Weiss)
New Approaches to H-infinite Controller Design
Based on Fuzzy Observers for T-S Fuzzy Systems
via LMI
(L. Xiaodong, Z. Qingling)
Nonlinear Modelling and Control of Helicopters
(J.C. Avila Vilchis, B. Brogliato, A. Dzul,
R. Lozano)

Brief Papers

Control of Mixing of Boundary Feedback in 2D
Channel Flow
(O.M. Aarno, M. Kristic, T.R. Bewley)
Formation of Machine Cells and Part Families
in Cellular Manufacturing Systems Using a Lin-
ear Assignment Algorithm
(J. Wang)
The Nature of Data Pre-filters in MPC Relevant
Identification – Open- and Closed-loop Issues
(R.B. Gopaluni, R.S. Patwardhan, S.L. Shah)
New Identification Approaches for Disturbed
Models
(K. Lo, W.H. Kwon)
Robust Stabilization and Guaranteed Cos Control
for Discrete-time Linear Systems by Static Output
Feedback
(G. Garcia, B. Pradin, S. Tarbouriech, F. Zeng)
Discrete Minimum Time Tracking Problem for
a Chain of Three Integrators with Bounded Input
(R. Zanasi, R. Morselli)
A Random Least-trimmed-squares Identification
Algorithm
(E.-W. Bai)

Book Reviews

Stable Adaptive Control and Estimation for
Nonlinear Systems - Neural and Fuzzy
Approximator Techniques, by J.T. Spooner,
M. Maggiore, R. Ordóñez and K.M. Passino
(S.S. Ge)
Fixed-interval Smoothing for State-space Models,
by H.L. Weinert
(P. Ainsleigh)
Mechatronic Control of Distributed Noise and
Vibration: A Lyapunov Approach, by C.D. Rahn
(M. Reyhanoglu)

WHO IS WHO IN IF AC



S. Bittanti – IFAC Council Member

Sergio Bittanti received the degree in Electronic Engineering in the Milan Institute of Technology (Politecnico di Milano), 1970, and in Mathematics in the Milan State University (Universita' Statale di Milano), 1978. In the early 70's he joined the Faculty of Engineering of the Politecnico di Milano, working in the Department of Electronics and Information. Here, at the opening of his university days, he had the privilege to serve as assistant of Giorgio Quazza for his exams of Process Control.

Besides being active on various theoretical topics of system identification and control, such as periodic optimization, adaptive control and recursive identification, he has developed a number of application studies, especially in the fields of energy and transportation.

He is the author of many papers in the best international journals, and the editor of a number of books, the last one being Identification, adaptation, learning – the science of learning models from data (Springer Verlag, 1996), edited jointly with Giorgio Picci.

Within IFAC, Mr. Bittanti covered various positions (in particular he was the chairman of the IFAC Technical Committee on Adaptive Control and Learning in the period 1999-2002). He is currently a member of the IFAC Council.

He served as general chairman for the IFAC workshops on "The Riccati Equation in Control, Systems and Signal Processing" (Como, Italy, June 1989), "Periodic Control Systems" (Cernobbio-Como, Italy, August 2001), "Adaptation and Learning in Control and Signal Processing" (Cernobbio-Como, Italy, August 2001). Moreover, he substantially contributed to the organization of the 3rd European Control Conference (Rome, Italy, September 1995).

For 7 years, from 1988 to 1995, he acted as national coordinator of the Italian research network Model identification, system control, signal processing, which connected about 70 Italian professor and researchers distributed in different universities of the Country.

At the Politecnico, the Engineering and Architecture University School of Milan, he served as supervisor of the PhD Program in Informatica e Automatica from 1993 to 1998. He has been the tutor of 13 PhD students, and enjoyed giving various courses to master students, with large audiences of excellent pupils. He is now professor of Model Identification and Data Analysis. Among other things, he built many bridges connecting the University world to the industry needs, especially in the areas of electronic devices, transportation vehicles and combustion systems.

Since 01.01.01 he has been IEEE Fellow. From 2003, Mr. Bittanti will be Editor in Chief of the European Journal of Control.



FORTHCOMING EVENTS

2003
No. 4
August

Title	2003	Place	Further Information
IFAC Symposium 10 th Transportation Systems	Aug. 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 Australia	http://www.tourhosts.com.au/ifac2003 e-mail: ifac2003@tourhosts.com.au
IFAC Symposium 13 th System Identification – SYSID 2003	August 27 – 29	Rotterdam Netherlands	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 Symposium Power Plants and Power Systems 2003	September 15 – 18	Seoul Korea	http://ifacpps2003.org e-mail: ifacpps2003@insession.co.kr
IFAC Conference 6 th Manoeuvring and Control of Marine Systems – MCMC 2003	September 17 – 19	Girona Spain	http://iiia.udg.es/mcmc03 e-mail: mcmc03@iiia.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
EWICS/IFAC/IFIP Intl. Conference Computer Safety, Reliability and Security – SAFECOMP 2003	September 23 – 26	Edinburgh UK	http://www.safecomp.org e-mail: info@safecomp.org
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
EPS/IFAC/AAPS Int. Conference Accelerator and Large Experimental Physics Control Systems – ICALEPCS 2003	Oct. 13 – 17	Gyeongju Korea	http://icalepcs2003.postech.ac.kr/ e-mail: icalepcs2003@icalepcs2003.postech.ac.kr
Title	2004	Place	Further Information
IFAC Symposium Advanced Control of Chemical Processes – ADCHEM 2003	June 18 – 20 NEW DATE! January 11 – 14, 2004	Hong Kong China	http://www.ust.hk/adchem2003 http://www.adchem2003.uni-stuttgart.de/ e-mail: adchem2003@ist.uni-stuttgart.de
IFAC/(CIGR) Workshop 5 th Artificial Intelligence in Agriculture	March 8 – 10	Cairo Egypt	http://www.claes.sci.eg/aia04 e-mail: soliman@claes.sci.eg
IFAC Symposium Computer Applications in Biotechnology	March 28 – 31	Nancy France	http://www.ensic.inpl-nancy.fr/CAB9/ e-mail: cab9@ensic.inpl-nancy.fr
IFAC Symposium 11 th Information Control Problems in Manufacturing – INCOM 2004	April 5 – 7	Salvador Brazil	http://www.eletr.ufrgs.br/incom2004/ e-mail: cpereira@eletr.ufrgs.br
IFAC Symposium Advances in Automotive Control	April 19 – 23	Salerno Italy	http://www.ifac04.unisa.it e-mail: ifac04@unisa.it
IFAC Symposium Cost Oriented Automation- COA04	June 7 – 9	Gatineau Canada	http://www.uqo.ca/blum/ifac/ e-mail: heinz.erbe@tu-berlin.de
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://www.automaatioseura.fi/TA04 e-mail: office@atu.fi

FORTHCOMING EVENTS (ctd.)

Title	2004	Place	Further Information
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 Symposium Dynamics and Control of Process Systems – DYCOPS-7	July 5 – 7	Cambridge MA, USA	http://www.dycops.org/ e-mail: craven@dycops.org
IFAC Conference Control Applications in Marine Systems – CAMS 2004	July 7 – 9	Ancona Italy	http://cams04.unian.it e-mail: cams04@unian.it
IFAC Workshop Fractional Differentiation and its Applications – FDA '04	July 19 – 20	Bordeaux France	http://www.lap.u-bordeaux.fr/fda04/home.html e-mail: fda04@lap.u-bordeaux.fr
Asian Control Conference (5th) – in co-operation with IFAC –	July 20 – 23	Melbourne Australia	http://ascc2004.ee.mu.oz.au e-mail: ascc@ee.mu.oz.au
IFAC Symposium Large Scale Systems: Theory and Applications	July 26 – 28	Osaka Japan	http://www-watt.mech.eng.osaka-u.ac.jp/lss2004/ e-mail: ifac-lss04@watt.mech.eng.osaka-u.ac.jp
IFAC Symposium Modeling and Control of Economic Systems	July 28 – 31	Redlands CA, USA	http://newton.uor.edu/ifac_sme_2004/ e-mail: sme_2004@redlands.edu
IFAC Workshops on – Adaptation and Learning in Control and Signal Processing – ALCOSP	August 30 –	Yokohama Japan	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		e-mail: sano@sd.keio.ac.jp
IFAC Symposium 6 th Nonlinear Control Systems – NOLCOS'04	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 Mechatronic Systems	September 6 – 8	Sydney Australia	http://rumi.newcastle.edu.au/mech2004/ e-mail: mechatronics2004@ee.newcastle.edu.au
IFAC Workshop 5th Time Delay Systems	September 8 – 10	Leuven Belgium	http://www.cs.kuleuven.ac.be/conference/tds04/ e-mail: wim.michiels@cs.kuleuven.ac.be
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/(IFIP/IFORS/IEA) Symposium 9 th Analysis, Design, and Evaluation of Human-Machine Systems – HMS 04	September 9 – 10	Atlanta GA, USA	http: not yet available e-mail: not yet available
IFAC Workshop 2 nd Advanced Fuzzy/Neural Control	September 16 – 17	Oulu Finland	http://www.ntsats 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: not yet available e-mail: SJayasuriya@mengr.tamu.edu
16 TH IFAC WORLD CONGRESS	JULY 4 – 8	PRAGUE CZ	http://www.ifac.cz
Title	2006	Place	Further Information
IFAC Symposium 7th Advances in Control Education	June 16 – 18	Madrid Spain	http:// not yet available e-mail: not yet available
IFAC Symposium System Identification – SYSID 2006	July	Newcastle Australia	http:// not yet available e-mail: not yet available