



1997  
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# Newsletter

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## Control of Industrial Systems

### IFAC/IFIP/IMACS Conference

Belfort, France, 20 - 22 May, 1997

The Conference (CIS'97) was organized by the Ecole Nationale d'Ingénieurs. Its sponsors were AFCET and IFAC with its Technical Committee (TC) on Large Scale Systems as the sponsoring committee and with its TC's on Control of Pulp and Paper Process and Control of Biotechnological Processes as co-sponsoring committees. The Conference co-sponsors were IFIP and IMACS.

The Conference was devoted to:  
**CONTROL FOR THE FUTURE OF YOUTH.**

Professor Manfred THOMA (Germany), IFAC Representative, 1984-1987 IFAC President and a member of the Honorary Committee, opened the Conference.

CIS'97 linked control science with control engineering in the framework of industrial systems control. Its papers contribute to new intrinsic scientific and engineering achievements in the areas of the three main control systems keystones:

Industrial objects (plants) to be controlled or which are controlled. The papers contribute to modelling of the objects, to an analysis of their qualitative dynamical properties (incorporating the new concept of trackability properties) and to simulation of their dynamic behaviour. The corresponding papers occupy mainly the Volume I.

Theory. It is widely ranging over various aspects of classical and new methodologies and methods of analysis and design of continuous-time control systems, discrete-time control systems (including discrete-event systems) and hybrid control systems. Volume II contains, in principle, the theoretical papers.

Controllers. Inherent aspects of their design and implementation in the overall control systems of industrial objects are studied in a number of papers, which can be found in Volume III.

Applications of control to various processes and industrial systems such as applications to control of biotechnological processes, electrical machines and systems, manufacturing processes and systems, mechanical systems, power systems or robots are presented in papers mainly of Volume III.

Among 309 papers announced in the Programme, 262 papers were presented by 259 authors from 38 countries to 268 participants.

CIS'97 was composed of:  
**Plenary Sessions.** There were ten plenary sessions on new scientific results and/or overviews given by:

- A. BERETTI (France): Impact de l'automatisation dans la stratégie des entreprises et la gestion des ressources humaines : l'industrie automobile
- E. DAVISON (Canada): Intelligent servomechanism control
- T. FUKUDA and T. ARAKAWA (Japan): Intelligent systems: robotics versus mechatronics
- M. J. GRIMBLE (UK): New directions in adaptive control. Theory and applications
- I. D. LANDAU (France): The R-S-T digital controller - Design and applications
- V. M. MATROSOV (Russia): Vector Lyapunov function method: theory and application to complex industrial systems

A. N. MICHEL and L. HOU (USA): Modeling and qualitative theory for general hybrid dynamical and control systems

M. PAVELLA (Belgium): Power system stability and control Comparative analysis

V. POSTA, C. RONDEAU, P. VAUDREY and P. WETZER (France): Structured modeling and simulation of power process generation

E. S. PYATNTSKIY (Russia): Multipurpose control of multiarm robot manipulators

### Invited and Combined Sessions.

Modelling, Identification and Control, Bond Graph: Dynamical Systems Study, Qualitative Approaches for Industrial Systems, Structural Analysis, Sliding Mode Control, Adaptive Control of Industrial Processes, Supervisory and Adaptive Control of Industrial Plants, Hybrid Dynamic Systems, Implicit and Singular Systems, Time-Delay Systems, Actuators, Control of Manufacturing Systems, Control of Robotic Systems, Nonlinear Control Applications in Robotics, Simulation, Modelling and Control of Piezoelectric Motors, Complex Electrical Systems Control.

**Contributed Sessions.** They were composed of papers with results over the topics of both the control systems keystones and the entire control systems such as:

Estimation and Identification: Applications, Modelling and Simulation; Manufacturing Systems, Control Theory, Control Methods, Discrete Time Systems, Discrete Event Systems, Algebraic Methods, Nonlinear Systems, Stability and Stabilization, Adaptive and Decentralized Control, Robust Control, Optimization, Fault Detection, Genetic Algorithms, Neural Networks, Petri Nets, Control Components and Controllers, Industrial Systems Control, Mechanical Systems Control, Electrical Machines Control, Process Control, Robot Control, Fuzzy Logic Control, Biotechnological Process Control, Manufacturing Production and Management.

The wide diversity of topics, high quality, theoretical impact and applications of contributed results acknowledged the following:

- Control, which is mainly automatic today, is the brain of every industrial system.
- Industrial systems automatic control necessitates a permanent interaction between systems and control science, and control engineering.
- Automatics is a self-contained and complete scientific and engineering discipline on automatic control, and as such, it has been interacting with almost all other scientific, engineering and social areas.
- Automatic control implies new job forms and qualifications, thus representing the area of the widely growing research and professional possibilities for pacific contributions to the well-being of humanity.
- Automatics is one of the most perspective disciplines open to young engineers and scientists.

The International Programme Committee of the Conference had a meeting during the Conference (on 21st May 1997). It proposes to IFAC, IFIP and IMACS to organize the next Conference on Automatic Control of Industrial Systems in 2000.

Lyubomir T. Gruyitch, CIS'97 IPC Chairman.

**Note**  
New Fax Number of  
Elsevier Science:  
+44/1865/843920

## Transportation IFAC/IFIP/IFORS Symposium

Chania, Crete, Greece

June 16 - 18, 1997

The Symposium was organised by the Department of Production and Management Engineering of the Technical University of Crete (Chania, Greece) on behalf of the Technical Chamber of Greece, the Greek NMO of IFAC. The event was sponsored by the IFAC TC on Transportation Systems and co-sponsored by IFIP, IFORS and the IFAC TCs on Air Traffic Control Automation, Automotive Control and Marine Systems. This was the first event to be held in Greece and marked the beginning of a number of forthcoming IFAC Symposia and Workshops that will be organised in this country shortly.

The Symposium was very successful in terms of paper submission and international attendance which certainly reflects the importance of transportation-related research within the automatic control field. A number of 405 extended abstracts were received and reviewed by two IPC members each. The IPC comprised a total of 48 members from 20 different countries. Out of 285 accepted abstracts, 264 full papers were received and included in the Final Program, organised in a total of 58 sessions. Five parallel streams of sessions (excluding the plenary sessions) were scheduled during the Symposium. A total of 229 papers were actually presented at the Symposium versus 35 no-show papers (13%). The total attendance to the Symposium was 286 participants from 32 countries, most of them from Greece (45), Italy (41), USA (40), France (22), Germany (21), UK (20), The Netherlands (17) and Israel (10). The share of participants by employer type was 61% from universities, 17% from companies, 17% from research institutes, and 5% from administrations.

The Symposium covered mainly the systems and control aspects of all transportation modes, with roughly 50% of the papers related to road traffic, 14 addressing rail systems, 10% on intermodal and

freight, 7% on public transport, 7% on marine systems, 6% on air traffic and 6% on automated highway systems. Highlights of the Symposium were the three plenary presentations, i.e. 'Contributions of Traffic Theory Toward Deployment of Intelligent Transportation Systems' by D. Gazis (Gazis Associates, USA); 'Automated Highway Systems: The Smart Way to Go' by R. Horowitz (University of California, Berkeley, USA); and 'Mechatronics in Ground Transportation - Current Trends and Future Possibilities' co-authored by W. Kortüm (DLR, Germany), R.M. Goodall (Loughborough University, UK) and J.K. Hedrick (University of California, Berkeley, USA), presented by the first co-author. Moreover a keynote address on 'The Information Society and Mobility: Telematics Applications in Transport' was presented by the Director of the European Transport Telematics Office, F. Karamitsos.

According to the opinion of most participants, the Symposium was successful both from the organisational and the technical point of view. Most presentations were of high quality and gave rise to interesting and fruitful discussions within and outside the sessions. Most recent trends and current research areas of traffic and transportation systems were covered in corresponding sessions. The preprints span three volumes and a total of 1500 pages. Besides the hardcopy, a CD containing the three preprint volumes was handed out to all participants.

We would like to thank the IPC and NOC members for their excellent work, our University for manifold support, the IFAC Secretariat and Elsevier Science for their continued support, particularly with respect to publications matters, and, last but not least, all participants who made a highly interesting technical event possible.

A. Pouliezios, NOC Chairman

## Distributed Computer Control Systems (DCCS '97)

### 14<sup>th</sup> IFAC Workshop

Seoul, Korea, July 28 - 30, 1997

This 14<sup>th</sup> Workshop on Distributed Computer Control Systems was held under the auspices of IFAC's Technical Committee on Distributed Computer Control Systems and organized jointly by the Engineering Research Center for Advanced Control and Instrumentation (ERC-ACI), Seoul National University and the Korean IFAC NMO, the Institute of Control, Automation and Systems Engineers (ICASE). It was also co-sponsored by the IFAC TC on Large Scale Systems (SML), the IFAC TC on Algorithms and Architectures for Real-Time Control (CCT), the IFAC TC on Real-Time Software Engineering (CCR), the IFAC TC on Man-Machine Systems (SMM), the Korea Science and Engineering Foundation (KOSEF), and the Automation and Systems Research Institute of Seoul National University (ASRI). Professor Ian MacLeod chaired the International Program Committee and Professor Wook H. Kwon, Dean of the School of Electrical Engineering, Seoul National University, chaired the National Organizing Committee. The Workshop was held at the campus of Seoul National University in Seoul, the capital city of Korea.

18 members of the International Program Committee and three members of the the National Organizing Committee carefully reviewed the 57 extended abstracts submitted from 21 countries. Even though the topics on distributed computer control systems are very diverse, two major disciplines were considered for the paper selections. The first discipline was to focus on the growing interest in real-time systems and networks including

field-bus networks. The other one was to introduce industry application results in the above areas. As a result, 33 regular papers were selected for the presentation at the Workshop. In addition to these regular papers and to make the exchange of ideas more profound, three plenary papers by the well-known scholars, M.G. Rodd, H. Kopetz and K. Ramamritham were invited. Professor Rodd gave a talk regarding real-time issues over a fieldbus, and Professor Kopetz focused on large-scale distributed real-time systems. Professor Ramamritham discussed about the temporal data and their management. These 36 papers were classified into four major categories according to their topics:

- Architecture for real-time systems and distributed computer control systems;
- Modelling for distributed computer control systems;
- Real-time network for distributed control;
- Applications in distributed computer control systems.

The Workshop was held during two and a half days, with seven continuous sessions; real-time systems, modeling for distributed computer control systems, applications in distributed computer control systems (1), fieldbus network for real-time control, real-time network for distributed control, applications in distributed computer control systems (2), and architecture for distributed control systems. At the Workshop, 29 papers out of 36 were presented by

their authors and will be included in the final proceedings, edited by Wook H. Kwon and Ian MacLeod. The International Program Committee recommended ten papers for possible publication in Control Engineering Practice (CEP) and two papers for consideration of publication in Automatica.

During the Workshop, the participants enjoyed some cultural activities. The first evening, a traditional Korean dinner was served together with a Korean traditional performance. The participants were also invited to a technical visit to the campus of Seoul National University including the Automation and Systems Research Institute (ASRI), the Engineering Research Center for Advanced Control and Instrumentation (ERC-ACI) and the School of Electrical Engineering. After the technical sessions, the participants had the opportunity to visit Samsung Electronic Company.

Finally it should be mentioned that there were also TC meetings during and immediately after the Workshop. At the TC meetings, many fruitful ideas and comments were discussed for the future of the IFAC TC on Distributed Computer Control Systems (CCD TC) and the coming DCCS workshop.

Wook H. Kwon, NOC Chairman

## Advances in Control Education

### 4<sup>th</sup> IFAC Symposium

Istanbul, Turkey, 14 - 16 July, 1997

The 4<sup>th</sup> Symposium on Advances in Control Education was sponsored by the IFAC TC on Control Education (EDCOM), the TC on Automation in Developing Countries, and co-sponsored by the TC on Social Impact of Automation. It was excellently prepared and organized by the Turkish NMO's National Organizing Committee chaired by A.T. Dinibütin. The goal of the Symposium as of the three preceding events (Swansea 1988, Boston 1991, Tokyo 1994) was again to provide an international forum for the discussion of recent developments and advances in control education as well as the dissemination of knowledge and experience in alternative methods and approaches in education. Several papers dealt with the latter topics initiating some discussion.

The Symposium was opened by the Rector of Istanbul Technical University, Prof. Dr. Gülsün Sağlam; each day began with one of the following plenary lectures. M. Athans (MIT): 'How to Teach Robust Multivariable Control System Design'; V. Kucera (Czech Academy of Science): 'A Bridge between State-Space and Transfer Function Methods'; E. Tulunay (Middle East Technical University, Turkey): 'Teaching and Research in Industrial Process Control and Instrumentation'. The 14 technical sessions were dedicated, among others, to curricula, new ways of teaching control, laboratory experiments, software tools, continuing education and training. A new invention at the 3<sup>rd</sup> Symposium in Tokyo was the video competition; this time, again a video tape on a laboratory experiment was awarded at the closing ceremony. 97 delegates from 32 countries participated and the authors of 78 accepted regular papers came from 36 countries; 12 papers could not be presented because their authors were not present. Although some excused themselves, there were others who were no-show authors with no excuse given.

It should again be mentioned that the Symposium was perfectly organized and the social events in and around the fascinating city of Istanbul were exciting. Heartfelt thanks go to A.T. Dinibütin, his colleagues and to all who helped. At the Tokyo Symposium, the Japanese friends dedicated a beautiful ACE banner to the TC on Control Education. At the closing ceremony of ACE'97, this banner was passed to L. Vlacic, representing the Australian NMO that will host the ACE 2000.

Karl Heinz Fason, EDCOM Chair 1993 - 1999



# FORTHCOMING EVENTS

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Oct.

Title	1998	Place	Deadline	Further Information
IFAC Workshop Advances in Automotive Control	Feb. 27 - March 2	Mohican State Park, USA	-	Prof. Giorgio Rizzoni, Dept. of Mech. Engg. 206 West 18 <sup>th</sup> Avenue Columbus, OH 4310 1189, USA FAX +1/614/292 3167 e-mail: rizzoni@osu.edu
IFAC Workshop Intelligent Components for Vehicles - ICV '98	March 23 - 24	Sevilla Spain	-	ICV'98 Secretariat Dpto Ingeniera de Sistemas Escuela Superior de Ingenieros Avda. Reina Mercedes, E-41012 Sevilla, Spain FAX +34 5 455 6849 e-mail: icv98@cartuja.us.es http://www.esi.us.es/isa/icv98
IFAC Symposium Intelligent Autonomous Vehicles - IAV '98	March 25 - 27	Madrid Spain	-	IAV'98 Secretariat Universidad Carlos III de Madrid Depto de Ingenieria, C/Butarque 15 E-28911 Leganes, Madrid, Spain FAX +34 1 624 9430 e-mail: iav98@ing.uc3m.es http://www.uc3m/iav98
IFAC Workshop 5 <sup>th</sup> Algorithms and Architectures for Real-Time Control - AARTC'98	April 15 - 17	Cancun Mexico	31 Oct. 1997	Dr. Fabian Garcia Nocetti IIMAS-UNAM, Apdo Postal 20 726 Del. Alvaro Obregon 01000 Mexico, D.F., Mexico FAX +52 5 616 0176 e-mail: fabian@uxdeal.iimas.unam.mx
IFAC Workshop Control Technologies for Aviation Safety	April 22 - 24	Prescott AZ, USA	15. Nov. 1997	Prof. Kay Pifer Embry Riddle Aeronautical University 3200 Willow Creek Road Prescott, AZ 86301, USA FAX +1 520 708 3899 e-mail: CONTAS98@pr.erau.edu
IFAC/CIGR Workshop Artificial Intelligence in Agriculture	April 24-26	Makuhari Japan	-	Prof. Y. Hashimoto, Dept. of Biomech. Systems Ehime Univ., Tarumi, Matsuyama 790, Japan FAX+81 89 947 8748 e-mail: hasimoto@agr.ehime-u.ac.jp
IFAC Conference Supplemental Ways for Improving International Stability - SWISS	May 14 - 16	Bucharest Romania	25 Oct. 1997	Control and Computer Faculty - SWISS 98 Politechnical University of Bucharest Splaiul Independentei Nr. 313 R-77206 Bucharest, Romania FAX +40/1/311 3242 e-mail: swiss@lnx.cib.pub.ro http://info.tuwien.ac.at/IHRT/swiis_tc/
IFAC Workshop Intelligent Assembly and Disassembly	May 21 - 23	Bled Slovenia	15. Oct. 1997	LASIM, Fac. of Mechanical Engg. Askerceva 6, SLO-1000 Ljubljana, Slovenia FAX +386/61/218567 e-mail: dragica.noe@fs.uni-lj.si
IFAC/(EFB/SFBJ) Conference Computer Applications in Bio- technology - CAB 7	May 31 - June 4	Osaka Japan	-	Prof. Suteaki Shioya, Dept. of Biotechnology Graduate School of Engineering Osaka University, 2-1 Yamada-oka Suita, Osaka 565, Japan FAX +81/6/879 7444 e-mail: shioya@process.bio.eng.osaka-u.ac.jp
IFAC Workshop Control Applications in Post-Harvest and Processing Technology - CAPPT'98	June 3 - 5	Budapest Hungary	15 Nov. 1997	Prof. I. Farkas Dept. of Physics and Process Control University of Agriculture, H-2103 Gödöllő, Hungary FAX +36 28 310804 e-mail: ifarkas@eng.gau.hu
IFAC Workshop On-Line Fault Detection and Super- vision in the Chemical Process Industries	June 4 - 5	Solaize France	-	Dr. Sylvie Cauvin, Institut Francais du Pétrole 1-4 avenue de Bois Préau F-92852 Rueile Malmaison Cedex, France FAX +33 1 47527022 e-mail: Sylvie.Cauvin@ifp.fr
IFAC Symposium Dynamics and Control of Process Systems - 5 <sup>th</sup> DYCOPS	June 8 - 10	Corfu Greece	15 Sept. 1997	Prof. Costas Kiparissides Dept. of Chemical Engineering Aristotle University of Thessaloniki, POB 472 GR-54006 Thessaloniki, Greece FAX +30 31 996198 e-mail: dycops98@alexandros.cperi.forth.gr http://lpre1.cperi.forth.gr/~dycops5/
IFAC/(CIGR) Workshop Control Applications and Ergonomics	June 14 - 17	Athens Greece	15 Sept. 1997	Prof. Nick Sigrimis Lab. of Automation in Agriculture Iera odos 75, GR-11855 Athens, Greece FAX +30 1 529 4039 e-mail: ns@auadec.aua.ariadne-t.gr

# FORTHCOMING EVENTS (ctd.)

Title	1998	Place	Deadline	Further Information
IFAC Workshop Nonsmooth and Discontinuous Problems of Control Optimization and Applications	June 17 - 20	Chelyabinsk Russia	15 Jan. 1998	Prof. V. Batukhtin Chelyabinsk State University Kashirinykh 129 4564136 Bratiev, Chelyabinsk, Russia FAX +3512/420859 e-mail: batu@cgu.chel.su
IFAC Symposium Information Control Problems in Manufacturing - INCOM '98	June 24 - 26	Nancy France		INCOM '98/CRAN-GSIP Faculté des Sciences Université Henri Poincaré Nancy I, BP 239 F-54506 Vandoeuvre les Nancy, France FAX +33/83 91 21 26 e-mail: incom98@cran.u-nancy.fr http://www.gsip.cran.u-nancy.fr/incom98.html
1998 American Control Conference (in cooperation with IFAC)	June 24-26	Philadelphia PA, USA	-	Prof. A. Haddad AACC Secretariat, Dept. ECE Northwestern Univ, 2145 Sheridan Rd. Evanston, IL 60208-3118, USA FAX +1/708/491-4455 e-mail: ahaddad@ece.nwu.edu http://www.ece.nwu.edu/~ahaddad/aacc
IFAC Symposium Computation in Economics, Finance and Engineering: Economic Systems	June 29 - July 1	Cambridge UK	15 Jan. 1998	Dr. Sean Holly Dept. of Applied Economics University of Cambridge, Sedgwick Avenue Cambridge CB3 9DE, UK FAX +44/1223 335475 e-mail: sean.holly@econ.cam.ac.uk
IFAC Symposium Nonlinear Control Systems Design NOLCOS '98	July 1 - 3	Enschede NL	15 Dec. 1997	Dr. Arjan van der Schaft University of Twente Dept. of Applied Mathematics POB 217, NL-7500 AE Enschede, Netherlands FAX +31/53/434 07333 e-mail: twarjan@math.utwente.nl
FAC Workshop Linear Time Delay Systems	July 6 - 7	Grenoble France	1 October 1997	Prof. Luc Dugard Lab. d'Automatique de Grenoble ENSIEG, BP 46 F-38402 St. Martin d'Herès-Cedex, France FAX +33 4 76 82 63889 e-mail: dugard@lag.ensieg.fr
ISDG/IFAC 8 <sup>th</sup> Intl. Symposium Dynamic Games and Applications	July 5 - 8	Maastricht Netherlands	*	Prof. O.J. Vrieze, University of Limburg Dept. of Mathematics, POB 615 NL-6200 Maastricht, Netherlands FAX +31/43/321 1889 e-mail: secr@math.rulimburg.nl
IFAC Conference System Structure and Control	July 8 - 10	Nantes France	-	Prof. J.J. Loiseau Lab. d'Automatique Nantes, 1, rue de la Noe F-44072 Nantes Cedex 03, France FAX +33 40 37 25 22 e-mail: loiseau@lan.ec-nantes.fr
IFAC/IMACS/IFIP Symposium Large Scale Systems: Theory and Applications	July 15 - 17	Patras Greece		IFAC-LSS'98, El. & Computer Engg. Dept. Lab. for Automation & Robotics University of Patras GR-26500 Rion Patras, Greece FAX +30 997 309 e-mail: grouppos@ee.upatras.gr
IFAC Symposium (14th) Automatic Control in Aerospace	Aug. 24 - 28	Seoul Korea	15 Oct. 1997	The Secretariat 14th IFAC/Aero Automatic Control Res. Centre, SNU San 56-1, Shinrim-Dong, Kwanak-Ku Seoul 151-742 Korea FAX: +82 2 875 1585 e-mail: ifac98aero@asri.snu.ac.kr http://asri.snu.ac.kr/~ifac98aero
IFAC Symposium Automation in Mining, Mineral and Metal Processing - MMM 98	Sept. 1 - 3	Düsseldorf Germany	31 Oct. 1997	VDI-VDE GMA, POB 10 11 30 D-40002 Düsseldorf, Germany FAX +49/211/6214-161 e-mail: gma@vdi.de
IFAC Symposium Low Cost Automation LCA 98	Sept. 8 - 10	Shenyang China, P.R.	30 Oct. 1997	Prof. Chen Zhen-Yu LCA 98 Secretariat, POB 919 Beijing 100071, China, P.R. FAX +86/10/63816990
IFAC/IEA/IFIP/IFORS Symposium Analysis, Design and Evaluation of Man-Machine Systems MMS '98	Sept. 16 - 18	Kyoto Japan		Prof. Hiroshi Tamura Kyoto Institute of Technology Matsugasaki, Sakyoku, Kyoto 606, Japan FAX +81 75 701 7211 e-mail: tamura@hisol.dj.kit.ac.jp
IFAC Workshop Motion Control	Sept. 21-23	Grenoble France	15 Dec. 1997	Prof. Luc Dugard Lab. d'Automatique de Grenoble ENSIEG, BP 46 F-38402 St. Martin d'Herès-Cedex, France FAX +33 4 76 82 63889 e-mail: dugard@lag.ensieg.fr

**Control Engineering Practice  
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**Preview**

Application of H-infinity Robust Control to the RM12 Jet Engine  
(M. Härefors)  
Least-Cost Dynamic Interaction of Power Plants and Power Systems  
(E. Welfonder)  
Active Vibration Control System Using a Gyro-Stabilizer  
(M. Yamada, H. Higashiyama, M. Namiki, Y. Kazao)  
Optimal Thrust Allocation for Marine Vessels  
(O.J. Sørtdalen)  
Fuzzy Self-Organising pH Control of an Ammonia Scrubber  
(J.-P. Yién, P. Jutila)  
Noise Source and Transmission Path Identification via State-Space System Identification  
(Young Man Cho)

Modeling and Identification of an Electromechanical Internal Combustion Engine Throttle Body  
(R. Scattolini, C. Siviero, M. Mazzucco, S. Ricci, L. Poggio, C. Rossi)  
Heuristic Search Method for Continuous-Path Tracking Optimization on High-Performance Industrial Robots  
(M.K. Madrid, A.G.P. Badan)  
Null-Space Dynamics-Based Control of Redundant Manipulators in Reducing Impact  
(W.J. Chung, I.H. Kim, J. Joh)  
Fault Diagnosis for a Hydraulic Drive System Using a Parameter-Estimation Method  
(D. Yu)  
Process Frequency Response Estimation from Relay Feedback  
(Qing-Guo Wang, Chang-Chich Hang, Qiang Bi)

Fuzzy Control for an Anaerobic Digester  
(M. Estabén, M. Poltich, J.P. Steyer)  
Active Noise Control Using Radial Basis Function Networks  
(M.O. Tokhi, R. Wood)

**IFAC Meeting Papers – Keyword Listing**

Youth Automation (YAC'95) August 1995, Beijing, PRC  
Automation in Mining, Mineral and Metal Processing (MMM'95), August 1995, Sun City, South Africa  
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**Preview**

Detection and Diagnosis of Oscillation in Control Loops  
(N.F. Thornhill and T. Hagglund)  
A Decision Support System for Lung Function Diagnosis in Infants  
(S. Leonhardt, P. Ahrens, D. Hoffmann and R. Isermann)  
Genetic Algorithms for Optimization in Predictive Control  
(C. Oppen, R. Babuska, U. Kayman, J.M. Sousa, H.B. Verbruggen and R. Isermann)  
Classifying Pilot-Plant Distillation Column Faults Using Neural Networks  
(D.A. Brydon, J.J. Cilliers and M.J. Willie)  
Feedback Linearization for Pneumatic Actuator Systems with Static Friction  
(T. Kimura, S. Hara, T. Fujita and T. Kagawa)  
Fuzzy Predictive Control Applied to an Air-Conditioning System  
(J.M. Sousa, R. Babuska and H.B. Verbruggen)

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Petri Nets and OMT for Modelling and Analysis of DEDS  
(D. Azzopardi and D.J. Holding)  
Control of the Thickener Operation in Alumina Production  
(Y.L. Sidrak)  
Preface to the Special Section of Algorithms and Architectures for Real-Time Control  
(A.E.B. Ruano and P.J. Fleming)  
A Multi-Processor Computer Architecture for Active Control  
(E.P. Darbyshire and C.J. Kerry)  
Hardware Support for Distributed Real-Time Operating Systems  
(M.M.B. Pontremoli and C.E. Pereira)  
Real-Time Inverse Kinematics for Robots with Offset and Reduced Wrist  
(A. Pashkevich)  
Visual Behaviors for Real-Time Control of a Binocular Active Vision System  
(J. Batista, P. Peixoto and H. Araujo)

QUICKTUNE: A Reliable Automatic Strategy for Determining PI and PPI Controller Parameters Using a FORDT Model  
(C.S. Cox, P.R. Daniel and A. Lowdon)  
Real-Time Parameter Estimation of Dynamic Temperature Models for Greenhouse Environmental Control  
(J. Boaventura Cunha, C. Couto and A.F. Ruano)

**IFAC Meeting Papers – Keyword Listing**

Intelligent Manufacturing Systems (IMS'95), October 1995, Bucharest, Romania  
Real-Time Programming (WRTP'96), November 1996, Gramado, RS, Brazil  
Algorithms and Architectures for Real-Time Control (AARTC'97), April 1997, Vilamoura, Portugal  
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Conference Calendar

**FORTHCOMING EVENTS (ctd.)**

Title	1998	Place	Deadline	Further Information
ICSC/IFAC Intl. Symposium Neural Computation - NC 98	Sept. 23-25	Vienna Austria	31 January 1998	ICSC Canada, POB 279, Millet Alberta TOC 1Z0, Canada FAX +1/403/387 4329 e-mail: icsc@compusmart.ab.ca or: Michael.Heiss@Siemens.at http://www.compusmart.ab.ca/icsc
IFAC/IFIP/IFORS Workshop Telematics - A New Dimension of Automation	Sept. 28-30	Vienna Austria	31 Dec. 1997	Dr. Robert Genser, TU Vienna/E318 Floragasse 7a, A-1040 Vienna, Austria FAX: 43/1/50418359
IFAC Symposium Artificial Intelligence in Real Time Control	October 6 - 8	Grand Canyon AZ, USA		Dr. Steven R. LeClair Materials Process Design Branch US Air Force Materials Directorate Wright Laboratory, Wright Patterson AFB Ohio 45433, USA FAX +1/513/476 7995 e-mail: leclairsr@ml.wpafb.af.mil http://www.sys36174.ml.wpafb.af.mil/airtc98.html
IFAC Workshop Space Robotics - SPRO'98	October 19 - 22	Montreal Canada	15 January 1998	Prof. J. O'Shea, SPRO'98 Ecole Polytechnique C.P. 6079, SUCC. Centre-ville Montreal, Que., H3C 3A7 Canada FAX +1/514 340 4174 e-mail: o'shea@auto.polymtl.ca
IFAC Workshop Control Applications in Marine Systems - CAMS '98	October 27 - 30	Fukuoka Japan	11 February 1998	Prof. K. Kijima Kyushu University, Dept. of Naval Architecture Higashi-ku, Fukuoka 812, Japan

Papers from the September 1997 Issue

## Papers

Analysis of State-Space System Identification Methods Based on Instrumental Variables and Subspace Fitting (M. Viberg, B. Wahlberg, B. Ottersten)  
Control of Classical Regime Molecular Objectives - Applications of Tracking and Variations on the Theme (Y. Chen, P. Gross, V. Ramakrishna, H. Rabitz, K. Mease, H. Singh)  
Optimal Steering for an Extended Class of Nonholonomic Systems Using Lagrange Functionals (D. D'Alessandro, A. Ferrante)

## Brief Papers

An Adaptive Controller for a General Class of Switched Reluctance Motor Models (B. Vedabargha, D.M. Dawson, W. Rhodes)  
Criteria for Robust Stability and Stabilization of Uncertain Linear Systems with State Delay (X. Li, C.E. De Souza)  
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## Technical Communiqué

Correction to 'A Unified Approach for the Stability Robustness of Polynomials in a Convex Set' (L. Qiu, E.J. Davison)

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## WHO IS WHO IN IFAC



Prof. Han-Fu Chen  
Coordinating Committee Chairman  
IPC Chairman for IFAC World Congress,  
Beijing, China, P.R. July 5 - 9, 1999

Prof. Han-Fu Chen was born in Hangzhou, Zhejiang Province, China. He received his diploma from the Department of Mathematics and Mechanics, Leningrad (St. Petersburg) University in 1961. After graduation he joined the Institute of Mathematics, Chinese Academy of Sciences (CAS). He was one of the first members of the Laboratory of Control Theory, established in 1962. In 1979 the Laboratory of Control Theory together with Prof. Chen joined the Institute of Systems Science, CAS. He is now a Professor of the Laboratory of Systems and Control and serves as the Director of the Institute of Systems Science, CAS. He was elected a member of the Chinese Academy of Sciences in 1993 and an IEEE Fellow in 1997.

Professor Han-Fu Chen is active both in the CAA (Chinese Association of Automation) and IFAC. He has served as one of the Co-Presidents of CAA since 1993. He was Chairman of the Theory Committee of CAA from 1989 - 1993. In IFAC he was one of the Vice-Chairmen of the Theory Committee from 1987 - 1993. He has been serving on IFAC's Technical Board as Coordinating Committee Chairman for the CC on Systems and Signals from 1993 onwards. He was one of the Vice-Chairmen of the IPC for the 13<sup>th</sup> IFAC World Congress in San Francisco, USA. For the 14<sup>th</sup> IFAC World Congress in Beijing in 1999 he is the IPC Chairman and the NOC Co-Chairman.

Han-Fu Chen is the editor of 'Systems Science and Mathematical Sciences' and an Associate Editor of the series 'Systems and Control: Foundations and Applications' by Birkhäuser. He is involved in editorial boards of several international and domestic journals: 'Stochastics and Stochastics Reports' (1984 -), 'Discrete Event Dynamic Systems' (1995 -), 'Control and Cybernetics' (1993 -), 'Science in China' (1985 -), 'Chinese Science Bulletin' (1985 -), 'Acta Mathematicae Applicatae Sinica' (1982 -).

Professor Chen's research interests are in control theory including stochastic systems, system identification, adaptive control, recursive estimation and stochastic approximation. He has authored and co-authored 6 monographs and more than 120 journal papers.

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