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## IFAC '96 on CD-ROM

The idea of putting the material of IFAC Congresses and Symposia on CD-ROMs (compact optical disks), instead of paper, first came up in 1991. Meanwhile, computers with CD-ROM readers have become more affordable. So the National Organizing Committee of the San Francisco Congress gave the matter some serious consideration - and concluded that, by 1996, the time may be ripe for this innovation.

Two questions, though, needed to be answered. The first, whether it was not just the biased perception of a bunch of Americans that CD-ROM readers are available at most places of the world where control engineers want access to the congress papers. The second, how the serious session-goer could be provided with the papers of his/her interest at the congress. The idea that computers on the spot could print out individual papers for everybody, according to personal wishes, was deemed premature. Instead, it was suggested that printed volumes should also be produced, arranged by technical subjects, and each participant should be able to choose a small subset of those volumes. By the kind assistance of the TB Chairman, Vladimir Kucera, members of the Technical Board and Chairmen of the Technical Committees were polled on these questions and replies were received from 30 persons. About two thirds felt that the control engineering community was getting ready for CD-ROMs while an overwhelming majority considered it necessary that a selection of printed volumes be provided as well.

Our friends at Elsevier were kept informed during the whole process and were invited at an early stage to participate. After some initial hesitation, they became enthusiastic supporters of the idea and are now ready to actually prepare and market the CD-ROMs.

As a result of all these discussions, the following arrangements are now in place for the 1996 Congress:

1. The full material of the Congress, estimated at about 8000 pages, will be placed on CD-ROMs. The disks will be prepared from the usual

camera-ready manuscripts by optical scanning. They will contain their own table of contents, authors' index and subject (keyword) index and will be readable under the three major operating systems (DOS, MAC and UNIX). Each full paying participant of the Congress will receive a copy as part of the registration package. Student participants, who pay a reduced registration fee, will be able to buy a copy at the Congress site. Copies provided to the Congress participant will carry a single user licence. The same CD-ROMs will be marketed by Elsevier after the Congress, as the official Congress Proceedings; these Proceedings copies will carry a library (multiple user) licence.

2. The full material will also be printed in the usual way from camera-ready manuscripts. The printed papers will be arranged in about 15 'subject volumes', each volume containing a thematically coherent part of the material. Congress participants will receive, as part of their registration package, two volumes of their choice and may purchase additional volumes for extra payment. Volume choices made at preregistration will be guaranteed while on-the-spot selections will be satisfied as long as the stocks permit. In addition to the subject volumes, there will be a Plenary and Index Volume that every participant will receive. This will contain the plenary papers, the table of contents, authors' index and subject (keyword) index for the full set of the subject volumes, and instructions concerning the use of the compact disks.

The organizers and the publisher do hope that the significant extra effort needed to implement this scheme will pay off, in terms of the satisfaction of the congress participants and of the entire control engineering community. They also trust that what is an experiment today will prove to be the wave of the future.

Janos Gertler  
Chairman, IFAC Publications Managing Board  
Publications Manager, IFAC '96 NOC

## International Program Committee for the IFAC World Congress in San Francisco 1996

The 1996 Triennial World Congress of the International Federation of Automatic Control will be held at the Marriott Hotel in San Francisco, California, June 29 to July 5, 1996. Two days of tutorial workshops are planned before the formal opening of the Congress. Workshops on June 29 will be basic, and it is intended to update control engineers and scientists on important developments during the triennium. The workshops on June 30 will be more advanced but they will be tutorial in nature. Formal opening of the Congress will be on Sunday afternoon, June 30, followed by a reception.

Each of the five days, July 1 - 5, will start with a plenary lecture of broad significance and interest. These are followed by three sessions per day, with up to 17 parallel sessions per day. There will be poster sessions. The Congress will be divided into nine mini-symposia covering all areas within the

scope of the 46 IFAC Technical Committees. The mini symposia will include survey papers, invited sessions, panel discussions, poster sessions, and case studies, as appropriate. Up to 1300 papers (total for lecture and poster type) may be accepted. Each paper will be limited to six pages of the proceedings, whether lecture or poster session type.

The deadline for submission of papers is June 30, 1995. Other details will appear in a Call for Papers to be distributed shortly.

The final program is expected to be completed at the December 1995 meeting of the International Program Committee at the IEEE Conference on Decision and Control (CDC) in New Orleans.

José Cruz, Jr.  
IPC Chairman



# Intelligent Components and Instruments for Control Applications SICICA '94 IFAC Symposium Budapest, Hungary June 8 - 10, 1994

The IFAC Technical Committee on Intelligent Components and Instruments organized the second SICICA Symposium in Budapest in June 1994. The Symposium was cosponsored by the IFAC Technical Committees on Application, Computers, Education, and Systems Engineering and by the IMEKO TC on Technical Diagnostics. The annual TC meeting of the main-sponsoring Committee was also held in conjunction with the Symposium on June 9.

The objective of the Symposium was to bring together control system specialists, equipment manufacturers and end users to evaluate the possibilities of different techniques, components and instruments for intelligent control.

The papers presented by the authors covered very interesting and novel areas of intelligent instrumentation such as controllers, sensors, actuators, control theories, applications including robot controls, neural networks, diagnostics AI and knowledge-based control systems. A special invited session was devoted to the problems of intelligent control of industrial processes organized and chaired by Mr. C.W. de Silva.

The International Program Committee (IPC) was composed of 28 experts from 18 countries and chaired by Professor Pedro Albertos, Vice-President of IFAC. The program included four Plenary Sessions, one Invited Session with 5 papers, and 16 Technical Sessions with 81 papers selected by the IPC from 93 abstracts submitted.

Four Plenary Lectures were presented on the following topics: Models and Languages for the Interoperability of Smart Instruments by M. Staroswiecki, Mechatronic Components - Design and Control Aspects by R. Isermann, Fuzzy Control Methodology in the Process Industry by P. Albertos.

The event was attended by 86 participants from 16 countries, with 16 participants from Hungary. Unfortunately, seven registered participants were not able to come and this was the reason for 12 session papers not being presented. Altogether 64 papers were presented by the authors.

IFAC was represented by Professor Pedro Albertos, Vice-President, and Professor Laszlo Keviczky, member of the IFAC Council. The other cosponsoring organization IMEKO was represented by Assoc. Professor Tamas Kemeny, Secretary General of IMEKO.

The Symposium took place in a pleasant hotel in the Buda Hills, in about 20 minutes' distance from the city centre.

We are certain that although the number of participants was lower than at the first Symposium in Malaga/Spain in 1992, the technical program was successful and all the participants and guests enjoyed this short visit to Hungary.

Tamas Boromisza, NOC Chairman

# Integration of Process Design and Control IFAC Workshop Baltimore, MD, USA June 27 - 28, 1994

This Workshop was held in conjunction with the 1994 American Control Conference and was sponsored by the IFAC Working Group on Chemical Process Control and the American Automatic Control Council. It was in essence the second IFAC Workshop in a series, the first, and very successful one having taken place under a slightly different name at the Centre for Process Systems Engineering at the Imperial College, London, in September 1992. The IPC Chair of the first Workshop, was Professor John D. Perkins. He was a plenary speaker at this second Workshop with the presentation 'Optimization as a Tool for Design/Control Interactions', thus guaranteeing continuity.

The existence of interactions between the design of a process and that of its control system has been known to industrial practitioners for a long time. In the past decade, academic research has produced methodologies and tools that begin to address the issue of designing processes that are flexible, can be controlled reliably and are inherently safe. This Workshop brought together academics and practitioners with interest in the integration of process design and control and examined the state of the art in methodologies and applications. The presented papers covered the design of chemical plants at different stages of detail. They also examined control issues from the plantwide level, where, for example, recycles between units can be very important, to the specific unit level, where the availability or selection of measurements might be the most important factor.

The richness of research issues within the theme of the Workshop resulted in about 60 papers being submitted, despite several other related international meetings taking place within a 3-4 week period. Forty papers were presented at the meeting, representing 16 countries, with over two third of the papers contributed by authors from countries other than the host country. There were over 80 participants from 18 countries, with 40 coming from outside the USA. This large international participation is an indicator of the growing worldwide recognition of the importance of the topic that was covered by this Workshop.

Evangelos Zafiriou  
IPC Chair

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# Journal of Process Control IFAC Affiliated Journal

Advanced process control systems can help achieve a wide range of benefits, including improved plant profitability, better safety, enhanced product quality, and reduced environmental hazards.

The Journal of Process Control is an international journal that unites work on the application of control theory, operations research, computer technology, and engineering principles. The emphasis is on practicality, although papers on theory in these areas are also accepted, provided the theoretical contribution is aimed at process control.

Considering the growing interest in this field, it is hardly surprising that the journal has rapidly established itself as essential reading for all process engineers, academics specializing in the control aspects of process engineering, regulatory bodies and government experts. 1995 sees the Journal of Process Control not only receive IFAC affiliation, but also increase in frequency to six issues per year.

The Journal of Process Control has the following scope:

## Control Applications

Unit operations control, implementation issues, benefits of improved control, control of batch processes

## Plant Monitoring

Real-time distributed databases, estimation and filtering techniques, fault detection and diagnosis, trip interlock systems, smart sensors

## Plant-Wide Control

Optimization, planning and scheduling, safety critical systems, statistical process control, quality control, decision support systems, management information systems, control system maintenance

## Control Techniques and Algorithms

Adaptive control, knowledge-based systems, model predictive control, optimal control, non-linear control, hierarchical control

## Process Modelling and Simulation

Process dynamics, system identification, modelling and simulation software, model reduction, real-time simulation, training simulators, knowledge-based methods

## Design Methods

Multivariable frequency response, control structure design, interaction analysis, process design for controllability, simultaneous process and control system design, design software

## Process Control Systems

Hardware and software for process control

The readership of the Journal of Process Control is distributed over 35 countries, representing a wide range of industries, such as bulk chemicals, oil refining, pulp and paper, petrochemicals, pharmaceuticals, biochemicals, food, minerals, agrochemicals and speciality chemicals.

Information with respect to subscriptions to the Journal of Process Control should be requested directly from

Elsevier Science Ltd  
The Boulevard, Langford Lane  
Kidlington, Oxford OX5 1GB  
United Kingdom  
Fax: +44/865/843952



Preview

- Modelling, Placing and Controlling Active Elements in Structural Engineering and Design (R.M. Goodall and S.A. Austin)
- A Pseudo Bond Graph Approach to Modelling the Water Steam Path of a Boiler (G.B. Grobbelaar, I.M. McLeod and P.H. Knothe)
- Robust Fault Detection Method Accounting for Modelling Errors in Uncertain Systems (O.-K. Kwon, G.C. Goodwin and W.-H. Kwon)
- A Self-Learning Rule-Based Control Algorithm for Chamferless Part Mating (Y.K. Park and H.S. Cho)
- A Spinning Filled Fluid Reservoir for Momentum Biased Spacecraft Nutation Damping (D.C. Ceballos)
- Open Surveys: An Information System for the Improvement of International Stability (J. Scrimgeour)
- Preface to the Special Section on Data Fusion: Architectures and Issues (M. Kokar and K. Kim)
- Possibility Theory and Data Fusion in Poorly Informed Environments (D. Dubois and H. Prade)
- 3-D Scene Reconstruction from Noisy Image Sequences Using Data Fusion (L. Hong and D. Brzakovic)
- Fusion of Visual and Range Features Using Fuzzy Logic (M.A. Abidi, M. Abdulghafour and T. Chandra)
- Data Fusion in Decentralized Sensor Networks (S. Grime and H.F. Durrant-Whyte)
- A Graph-Theoretic Metric for Distributed Data Fusion in Multi-Target Tracking (D.E. Maurer, K.L. Oates and A.K. Chrysostomou)
- Centralized Multisensor Fusion Algorithms for Tracking Applications (L.Y. Pao)
- Tracking and Fusion Using Multiple Sensors (K.-C. Chang)
- Abstracts
- 12th IFAC Triennial World Congress on Automatic Control (Volume 3), July 1993, Sydney, Australia
- Index of Abstracts
- Book Reviews
- Conference Calendar

IFAC Electronic Information Server

The server is operated by Goya Servicios Telematicos S.A., the Spanish operator for EUNET. Its Internet address is ftp.eunet.es (or 193.127.1.2). To get access to IFAC information, you simply type in your machine:

```
ftp ftp.eunet.es
When asked for your name, type:
anonymous
When asked for your password, type your e-mail address:
me@mymachine.myplace
Once you have gone through the login procedure, type:
cd gopher/useful/ifac
and then you can use the standard ftp commands:
dir list directory
cd change to another directory
get file get a copy of file into your local directory
quit finish the ftp session
This information may also be accessed at
gopher://gopher.eunet.es/11/useful/ifac
The user commands are:
gopher gopher.eunet.es
go-to Useful Services
go to International
Federation of Automatic
Control (IFAC)
```

or, if you are using mosaic:  
mosaic gopher://gopher.eunet.es  
To post additional information (e.g. IFAC symposium, conference or workshop announcements) to the server, send an e-mail message to: jpuente@gic.tat.upm.es  
(Juan de la Puente)  
Problems and errors can be reported at the same address.

Sponsored by IFAC, cosponsored by IFORS, supported by the National Natural Science Foundation of China and the State Commission of Education of China, organized by the Chinese Association of Automation and the Tianjin University, the 7th IFAC/IFORS Symposium on Transportation Systems: Theory and Application of Advanced Technology, was held during August 24 - 26, 1994 in Tianjin, China. It was the 7th IFAC Symposium in the series of Transportation Systems: Versaille (France 1970), Monte Carlo (Monaco 1974), Columbus (USA 1976), Baden-Baden (Germany 1983), Vienna (Austria 1986), Paris (France 1989).

The Symposium was a great success with 189 participants from 22 countries and areas and a total of 175 papers presented in 4 parallel sessions over three days. Professor Liu Bao of Tianjin University and Professor Jean Marc Blosseville of the Institut National de Recherche sur les Transports et leur Sécurité de France were the Co-Chairmen of the International Program Committee. The Chairman of the Organization Committee was Professor Li Guangquan, the President of Tianjin University.

In the Preprints, 200 papers selected from 420 submitted abstracts were published in one plenary session and 34 general sessions. Papers were grouped into the following subfields: Advance Transport Management (2 sessions), New Transportation Models (3 sessions), Road Traffic Management (2 sessions), Urban Traffic Control (3 sessions), Freeway Traffic Control (3 sessions), Motorway Modelling (1 session), Road Network Monitoring (1 session), Road Traffic Safety (1 session), Road Traffic Forecasting (1 session), Road Traffic Automation Systems and Automated Incident Detection Systems for Road Traffic (1 session), Route Guidance for Road Traffic (1 session), New Sensors (2 sessions), Automatic Vehicles (2 sessions), Air Traffic (2 sessions), Maritime Traffic (2 sessions), Rail Traffic (2 sessions), Rail Train Control (2 sessions), Human Factors and User Interfaces (1 session). There were 25 no-show authors (12.5%), thus many sessions were carried out with a full schedule, some sessions added some late papers to fill the time left by no-show authors. All participants were

very active in attendance; discussion, comment and questions always followed each presentation.

A round table discussion on optimization used in Transportation Systems was organized by Prof. A.S. Quan of the Institute of Applied Mathematics of the Chinese Academy of Science, during which theorists and practitioners exchanged their knowledge and experience. Both sides benefitted a lot. A report session was held in which Mr. T. Li, the head of the Bureau of Transportation and Energy in the State Planning Commission of China gave a report on the state of the art of transportation systems in China.

More than 30 participants coming from European industry and research institutes attended this session, and questions and answers continued the report until the end of time allotted to the session. At the video show session, four authors showed and recommended their research results on video tape, which seemed to be an effective way to complement their presentations during normal technical sessions, where they were not able to introduce their findings fully due to lack of time and restraints caused by the equipment.

By means of the routing procedure of the IFAC Publications office, the IPC members and session chairpersons selected good papers from those presented in each session, and the final selection for the IFAC Journal Control Engineering Practice was then made by J.M. Blosseville and Bao Liu using the following criteria: good presentation, high quality and (a) work based on really important infrastructure of transportation systems, or (b) new ideas which have been tested with practical data, or (c) a usable solution to some difficult problems in transportation. The balance of fields and countries of the first authors was also considered as an additional criterion when other conditions were equal.

At the farewell dinner party, co-chairman J.M. Blosseville announced on behalf of the Chairman of the IFAC TC on Transportation Systems, J.P. Perrin, that the 8th IFAC Symposium on Transportation Systems will be held in Europe in three years' time.

Bao Liu, IPC Co-Chairman



a warm welcome extended to the IFAC family



Papers From the November 1994 Issue

**Papers**

Vehicle Integrated Control for Steering and Traction Systems by Mu-Synthesis (E. Ono, K. Takahashi, N. Iwama, Y. Hayashi, et al.)  
Automatic Initialization of a Robust Self-Tuning Controller (M. Lundh, K.J. Åström)  
Analysis and Applications of Self-Tuning Controls in a Refining Process: Case Study (S. Kotob, M. Badran, I. Al-Atiqi, M. Juraidan)  
Control of a Planar Fine Positioner Actuated by Metal Bellows (F. Badano, M. Betemps, D. Thomasset)  
Limits on Achievable Robustness Against Coprime Factor Uncertainty (L. Christian, J.S. Freudenberg)  
Passivity and Parametric Robustness of a New Class of Adaptive Systems (M. Krstic, I. Kanellakopoulos, P.V. Kokotovic)  
Worst Case Identification of Continuous Time Systems via Interpolation (Jie Chen, Guoxiang Gu, Carl N. Nett)  
Geometric Synthesis of Aerospace Plane Ascent Guidance Logic (K.D. Mease, M.A. van Buren)  
Innovations Generation in the Presence of Unknown Inputs: Application to Robust Failure Detection (R. Nikoukhah)  
Application of H-infinity Control to Active Suspension Systems (M. Yamashita, K. Fujimori, K. Hayakawa, H. Kimura)  
Minimum-Volume Ellipsoids Containing Compact Sets. Application to Parameter Bounding (L. Pronzato, E. Water)  
Robust Control Analysis and Design for Discrete-Time Singular Systems (Chun-Hsiung Fang, L. Lee, F.R. Chang)

**Brief Papers**

Optimal State Feedback Control with a Prescribed Contraction Property (A. Malmgren, K. Nordstrom)  
On Developmental Systems: Multilevel and Parallel Development (J.C. Gille, S. Wegrzyn, P. Vidal)  
Robust Decoupling, Ideal Steering Dynamics, and Yaw Stabilization of 4WS Cars (J. Ackermann)  
Fuzzy Dynamic System & Fuzzy Linguistic Controller Classification (P.P. Wang, Ching-Yu Tyan)  
On Robust AML Identification Algorithms (V.Z. Filipovic, B. Kovacevic)  
A Frequency-Domain Robust Instability Criterion for Time-Varying and Non-Linear Systems (Y.Z. Tsympkin, D.J. Hill, A.J. Isaksson)  
On the Representation of Sensor Faults in Fault Detection Filters (Jaehong Park, G. Rizzoni, W.B. Ribbens)  
H-2-Suboptimal Stable Stabilization (Y.W. Wang, D.S. Bernstein)  
Design of Decentralized Linear State Function Observers (Ming-Hou, P.C. Mueller)

**Book Reviews**

Applied Digital Control - Theory, Design and Implementation, by R.J. Leigh (J. van Amerongen)  
Simulation and Modelling of Continuous Systems - A Case Study Approach, by D. Matko, R. Karba, et al. (I. Troch)

Neurocontrol, by H. Tolle and E. Ersu (C.J. Harris)  
Linear Systems Theory, by W.J. Rugh

Papers From the December 1994 Issue

**Papers**

A Unified Framework for the Study of Anti-Windup Designs (M. Morari, M.V. Kothare, P.J. Campo)  
Tracking in Nonlinear Differential-Algebraic Control Systems with Applications to Constrained Robot Systems (H. Krishnan, N.H. McClamroch)  
The Rank One Mixed mu Problem and 'Kharitonov-Type' Analysis (P.M. Young)  
Adaptive GPC Based on Laguerre Filters Modelling (A.L. Elshafei, G.A. Dumont, et al.)  
Computation of Structural Invariants of Generalized State Space Systems (P. Misra, P. van Dooren, A. Varga)  
Continuity of Optimal Robustness and Robust Stabilization in Slowly Varying Systems (Le Yi Wang, G.-M. Joh)  
H(infinity) Control of Railroad Vehicle Active Suspension (T. Hirata, S. Koizumi, R. Takahashi)  
Easily Testable Sufficient Conditions for the Robust Stability of Systems with Multilinear Parameter Dependence (B.D.O. Anderson, F. Kraus, M. Mansour)

**Brief Papers**

Time-Optimal Feedback System Controlling a Discontinuous Dynamic Object Reaching a Moving Target (W. Hejmo)  
Classification by Varying Features with an Erring Sensor (P.-O. Gutman, K. Peleg, U. Ben-Hanan)  
A Two-Stage Dual Suboptimal Controller for Stochastic Systems Approximate Moments (R. Maitelli, T. Yoneyama)  
Strictly Doubly Coprime Factorizations and all Stabilizing Compensators Related to Reduced-Order Observers (P. Hippe)  
Sliding Mode Control of Distributed Parameter Systems (Yue-Ming Hu, K.-C. Li, T.-P. Leung)  
An Innovation Representation for Nonlinear Systems with Application to Parameter and State Estimation (M.S. Ahmed)  
Self-Tuning PID Control: A Multivariable Derivation and Application (R. Yusof, S. Omatu, M. Khalid)  
Automatic Tuning of PID Controllers Based on Transfer Function Estimation (T.S. Schei)  
Generalized Predictive Control for Non-Stationary Systems (O.P. Palsson, H. Madsen, H.T. Sogaard)  
State Space Dual-Rate Self Tuning (M.S. Ahmed)  
Comparison Principle, Positive Invariance and Constrained Regulation (E. Gravalou, G. Bitsoris)  
Reliable Linear-Quadratic State-Feedback Control (R.J. Veillette)  
Practical Stabilization of a Class of Nonlinear Systems with Partially Known Uncertainties

**Technical Communiques**

H(infinity Control with Performance Bound for a Class of Uncertain Linear Systems (S.-H. Park, Z. Bien)  
On the Stabilizing Property of SIORHC (A. Bemporad, L. Chisci, E. Mosca)

## WHO IS WHO IN IFAC



Professor Katsuhisa Furuta  
Member of the IFAC Council

Katsuhisa Furuta was born in Tokyo, Japan, in 1940. He received his B.S., M.S. and Ph.D. degrees from the Tokyo Institute of Technology in 1962, 1964 and 1967 respectively. His supervisor was the late Professor Keisuke Izawa, who was involved in the foundation of IFAC. Professor Furuta was a post-doctoral fellow at Laval University (Quebec, Canada) from July 1967 to August 1969. Since then he has been on the teaching staff of the Tokyo Institute of Technology, Department of Control Engineering, where he is currently a Professor of the Graduate School of Information Science and Engineering.

Katsuhisa Furuta's research interest lies in the areas of linear systems theory, digital control and its application and robot control. He has been interested in the control of inverted pendulums like the swing-up of a single pendulum and stabilization of multiple inverted pendulums, which has been used in many universities as a laboratory experimental apparatus. His group has developed a program package for computer aided control system design named DPACS in 1977, which is used by many industries. He is the author or co-author of six textbooks in Japanese, one of which was translated into English. Its title is 'State Variable Methods in Automatic Control' and was published by John Wiley in 1988.

He received the Paper Award from the Society of Instrument and Control Engineers (Japan) in 1974 and the Aida Technical Award from the Japan Society for Technology of Plasticity in 1992. His present research interests include the discrete-time variable structure system.

In IFAC, Professor Furuta has been involved in several IFAC symposia as IPC member, such as CADCS 1982, 1985, 1988, 1991 and others. He was also the IPC Chairman of the 3rd IFAC Symposium on Advances in Control Education, 1994. He was a Vice-Chairman of the Technical Committee on Education (EDCOM) from 1990 to 1993, and has been a member of the Technical Board since 1993. After the resignation of Professor Atsunobe Ichikawa from the IFAC Council due to his appointment as Commissioner of the National Personal Authority, a high ranking Japanese government position, Professor Furuta was appointed to succeed him in the Council position.

In other academic societies, Professor Furuta is currently serving as chairman of the international committee of the IEEE CS Society from 1992; he was elected member of the IEEE CS Society Board of Governors in 1994 and is a co-chairman of the Program Committee of the IEEE CDC in 1996. He is a senior member of IEEE and a Fellow of the Society of Instrument and Control Engineers (Japan).

**This Newsletter may be reproduced in whole or in part. We encourage reprinting in national and local automatic control periodicals. Acknowledgement to IFAC would be appreciated.**





# FORTHCOMING EVENTS

(cont.) **1994**  
**No. 5**  
**Oct.**

| Title  | 1995               | Place                             | Deadline        | Further Information  |
|--|--------------------|-----------------------------------|-----------------|--|
| SAE/IFAC 1995 Congress and Exposition of the Society of Automotive Engineers   | Feb. 27<br>March 2 | Detroit<br>MI, USA                | -               | Ms. Karin Bolcschazy<br>Engineering Meetings Division, SAE Intern.<br>400 Commonwealth Drive<br>Warrendale, PA 15096-0001, USA<br>FAX +1/412/776 0002  |
| IFAC Workshop<br>Advances in Automotive Control  | March<br>13 - 17   | Ascona<br>Switzerland             | -               | Ms. Claudia Wittwer, ETH Zentrum<br>Inst. f. Energietechnik<br>CH-8092 Zurich, Switzerland<br>FAX +41/1/632 11 77<br>e-mail: guzzella@lrv.iet.envt.ethz.ch                                     |
| CIRP/IFAC/IFIP/INNS Workshop<br>Learning in Intelligent Manufacturing Systems - IMS                                      | April<br>20 - 21   | Budapest<br>Hungary               | -               | Dr. Laszlo Monostori, MTA SZTAKI<br>Hungarian Academy of Sciences<br>POB 63, H-1518 Budapest, Hungary<br>FAX +36/1/1667503   |
| IMACS/IFAC Symposium<br>Mathematical Modelling and Simulation in Agriculture and Bio-Industries                          | May<br>9 - 12      | Brussels<br>Belgium               | -               | M'SABI'95 Symposium<br>c/o Lab. Automatique, U.L.B., CP 165<br>50, ave. F.D. Roosevelt<br>B-1050 Belgium, FAX +32/2/650 2677<br>e-mail: labauto@labauto.ulb.ac.be                              |
| IFAC Workshop<br>Control Applications in Marine Systems - CAMS 95  | May<br>10 - 13     | Trondheim<br>Norway               | 1 Nov.<br>1994  | AProf. Thor I. Fossen, CAMS-95 Secr.<br>Dept. of Engg. Cybernetics<br>Norwegian Institute of Technology<br>N-7034 Trondheim, Norway<br>FAX +47 /73594399, e-mail: tif@itk.unit.no              |
| IFAC/EFB Intl. Conference<br>Computer Applications in Biotechnology  | May<br>14 - 17     | Garmisch-Partenkirchen<br>Germany | -               | DECHEMA e.V., Conference Office CAB 6<br>POB 15 01 04, D-60061 Frankfurt am Main<br>Germany, FAX +49/69/7564 201   |
| IFAC/IFIP Workshop<br>Artificial Intelligence in Agriculture   | May<br>29 - 31     | Wageningen<br>Netherlands         | 1 Nov.<br>1994  | Prof. A. Udink ten Cate<br>Agricultural Research Dept. (DLO-NL)<br>Centre de Born, POB 59<br>NL-6700 AB Wageningen, Netherlands<br>FAX +31/8370/24060<br>e-mail: udink@dlo.agro.nl             |
| IFAC Workshop<br>Algorithms and Architectures for Real-Time Control - AARTC 95   | May 31<br>June 2   | Ostend<br>Belgium                 | 31 Oct.<br>1994 | AARTC-95, c/o BIRA<br>Desguinlei 214, B-2018 Antwerp, Belgium<br>FAX +32/3/216 06 89, e-mail: (internet)<br>100045.2621@CompuServe.COM   |
| IFAC Workshop<br>Control Applications in Post-Harvest and Processing Technology  | June<br>1 - 2      | Ostend<br>Belgium                 | 31 Oct<br>1994  | BIRA, Desguinlei 214, B-2018 Antwerp<br>Belgium<br>FAX +32/3/216 06 89   |
| IFAC Symposium (4th)<br>Dynamics and Control of Chemical Reactors, Distillation Columns and Batch Processes - DYCORN '95 | June<br>7 - 9      | Helsingor<br>Denmark              | -               | DYCORD '95, Danish Automation Society<br>Symbion Science Park Copenhagen<br>Freubjergvej 3, DK-2100 Copenhagen<br>Denmark, FAX +45/3120 5521<br>e-mail: symbjeba@inet.uni-c.dk                 |
| IFAC Workshop<br>On-Line Fault Detection and Supervision in the Chemical Process Industries                              | June<br>12 - 13    | Newcastle<br>UK                   | -               | Prof. Julian Morris<br>University of Newcastle upon Tyne<br>Dept. of Chem. & Process Engg.<br>Newcastle upon Tyne, NE1 7RU, UK<br>FAX +44/91 261 1182<br>e-mail: julian.morris@uk.ac.newcastle |
| IFAC Conference (2nd)<br>Intelligent Autonomous Vehicles   | June<br>12 - 14    | Espoo<br>Finland                  | -               | IAV '95 Secretariat, Finn. Society of Autom<br>Asemapaalikkonkatu 12 C<br>SF-00520 Helsinki, Finland<br>FAX +358/0/1461 650  |
| IFAC Symposium<br>Adaptive Systems in Control and Signal Processing - ACASP '95  | June<br>14 - 16    | Budapest<br>Hungary               | -               | Prof. L. Keviczky<br>Computer & Automation Institute, H A S<br>POB 63, H-1518 Budapest, Hungary<br>FAX +36/1/1667 503<br>e-mail: h10kev@huella.bitnet  |
| 1995 American Control Conference<br>(in cooperation with IFAC)   | June<br>21 - 23    | Seattle, WA<br>USA                | -               | Prof. M. Tomizuka, Dept. of M.E.<br>University of California<br>Berkeley, CA 94720, USA<br>FAX 510/642 5599<br>e-mail: tomizuka@euler.berkeley.edu   |
| IFAC Symposium<br>Nonlinear Control Systems Design NOLCOS '95  | June<br>26 - 28    | Lake Tahoe<br>CA, USA             | -               | Prof. A.J. Krener, Dept. of Mathematics<br>University of California<br>Davis, CA 95616-8633, USA<br>FAX +1/916/752 6635<br>e-mail: ajkrenr@ucdavis.edu   |
| IFAC/IFIP/IFORS/IEA Symposium<br>Analysis, Design, and Evaluation of Man-Machine Systems - MMS '95                       | June<br>27 - 29    | Cambridge<br>MA, USA              | -               | Ms. Veronica Culbert, 3-348 MIT<br>Cambridge, MA 02139, USA<br>FAX +617/253-4196<br>e-mail: sheridan@mit.edu   |
| IFAC/IFIP/IFORS/SEDC Symposium<br>Modelling and Control of National and Regional Economies                               | July<br>2 - 5      | Brisbane<br>Australia             | -               | Convention Manager (IFAC 95), POB E181<br>Queen Victoria Terrace, ACT 2600, Australia<br>FAX +61/6/273 2918  |



# FORTHCOMING EVENTS (ctd.)

|   |                      |                           |                 |  |
|---|----------------------|---------------------------|-----------------|--|
| IFAC Conference<br>System Structure and Control   | July<br>5 - 7        | Nantes<br>France          | -               | Mr. J.J. Loiseau, IFAC CSSC,<br>LAN-ECN, URA CNRS 823, 1, Rue de la Noe<br>F-44072 Nantes Cedex 03, France<br>FAX +33/40 372522<br>e-mail: loiseau@lan.ec-nantes.fr                      |
| IFIP/IFAC/IFORS Conference (17th)<br>System Modelling and<br>Optimization                                     | July<br>10 - 14      | Prague<br>CZ              | -               | Dr. J. Dolezal<br>Institute of Info Theory and Automation, UTIA,<br>POB 18, CZ-18208 Prague, Czech Rep.<br>FAX +42/2/824755, e-mail: ifip@utia.cas.cz                                    |
| IFAC/IFORS/IMACS Symp. (7th)<br>Large Scale Systems: Theory<br>and Applications                               | July<br>11 - 13      | London<br>UK              | -               | LSS'95 Secretariat, Control Engineering Centre<br>City University, Northampton Square<br>London EC1V 0HB, UK, FAX +44/71/477 8568<br>e-mail: lss95@city.ac.uk                            |
| IFAC Conference<br>Youth Automation YAC '95   | August<br>8 - 10     | Beijing<br>China, P.R.    | -               | YAC'95 Secretariat, Mr. Bin Zhang<br>Chinese Assoc. of Automation, CAST Co<br>22 Baiwanzhuang Street<br>Beijing 100037, China, P.R.<br>FAX +86/1/832 6042                                |
| IFAC Conference<br>Intelligent Autonomous Control<br>in Aerospace IACA '95                                    | August<br>14 - 16    | Beijing<br>China, P.R.    | -               | IFAC IACA Conference Sec.<br>Ms. Li Jing, Beijing Inst. of Control Eng.<br>Chinese Academy of Space Technology<br>POB 2729, Beijing 100080, China, P.R.<br>FAX +86/1/254 3110            |
| ASME/IEEE/IFAC Intl. Conf.<br>Recent Advances in Mechatronics   | August<br>14 - 16    | Istanbul<br>Turkey        | 3 Feb.<br>1995  | Prof. Okay Kaynak<br>Bogazici University, Dept. of EE<br>UNESCO Chair on Mechatronics<br>80815 Bebek - Istanbul, Turkey<br>FAX +90/212/257 50 30<br>e-mail: kaynak@vs6410.cc.boun.edu.tr |
| IFAC Symposium (8th)<br>Automation in Mining, Mineral<br>and Metal Processing                                 | Aug.<br>29 - 31      | Sun City<br>South Africa  | Oct.<br>1994    | MMM 95 Conference Secretariat<br>MINTEK, Private Bag X3015,<br>Randburg 2125, RSA, FAX +27/11 793 2413   |
| 1995 European Control Conference<br>(in cooperation with IFAC)  | Sept.<br>5 - 8       | Rome<br>Italy             | -               | ECC 95 Secretariat<br>D I S, Univ. degli Studi di Roma<br>"La Sapienza", Via Eudossiana 18<br>I-00184 Rome, Italy, FAX 39/6/44 585367<br>e-mail: ecc95@itcaspur.caspur.it                |
| IFAC Workshop<br>Control Education and Technology<br>Transfer Issues  | Sept.<br>11 - 12     | Curitiba<br>Brazil        | 13 Jan.<br>1995 | Prof. Marco A. Buseti de Paula<br>Centro Federal de Educacao Tecnologica<br>do Paran, Av. 7 de Setembro 3165<br>80230-901 Curitiba, Paran, Brazil<br>FAX +55/41/224-5170               |
| IFAC Symposium<br>Low Cost Automation   | Sept.<br>13 - 15     | Buenos Aires<br>Argentina | 15 Nov.<br>1994 | IFAC LCA 95, Eng. A. T. Casucci<br>AADECA, Av. Callao 220 1oB<br>1022 Buenos Aires, Argentina<br>FAX +54/1/374 37 80   |
| IFAC Workshop<br>Human-Oriented Design of<br>Advanced Robotics Systems  | Sept.<br>19 - 20     | Vienna<br>Austria         | 1 April<br>1995 | Prof. P. Kopacek, Technical University /E 318<br>Floragasse 7 a, A-1040 Vienna, Austria<br>FAX +43/1/504 18 359<br>e-mail: kopacek@ihrtl.ihrt.tuwien.ac.at                               |
| IFAC Symposium<br>Automated Systems Based on<br>Human Skills - Joint Design of<br>Technology and Organization | Sept.<br>25 - 28     | Berlin<br>Germany         | 10 Feb.<br>1995 | VDI/VDE GMA, Graf Recke Strasse 84<br>D-40239 Dusseldorf, Germany<br>FAX +49/211/6214-161  |
| IFAC Workshop<br>Distributed Computer Control Systems<br>- DCCS 95  | Sept.<br>27 - 29     | Toulouse<br>France        | 1 March<br>1995 | Prof. A.E.K. Sahaoui, LAAS-CNRS<br>7, Avenue Colonel Roche<br>F-31077 Toulouse, France, FAX +33/61553577<br>e-mail: dccs95@laas.fr   |
| IFAC Conference<br>Supplemental Ways for Improving<br>International Stability - SWISS                         | Sept. 29 -<br>Oct. 1 | Vienna<br>Austria         | 1 April<br>1995 | Dr. Alois Frotschnig, Technical Univ., IHRT<br>Floragasse 7 a, A-1040 Vienna, Austria<br>FAX +43/1/504 18 359<br>e-mail: alois@ihrtl.ihrt.tuwien.ac.at                                   |
| IFAC/IFORS/IMACS/ISPE Symp.<br>Information Control Problems in<br>Manufacturing - INCOM 95                    | Oct.<br>4 - 6        | Beijing<br>China, P.R.    | 1 Nov.<br>1994  | INCOM '95 Secretariat<br>Institute of Manufacturing Systems /720)<br>Beijing University of Aero-Astro, POB 85<br>Beijing 100083, China, P.R.<br>FAX: 86/1/201 5347                       |
| IFAC Workshop<br>Motion Control   | Oct.<br>9 - 11       | Munich<br>Germany         | 31 Jan.<br>1995 | VDI/VDE GMA, Graf Recke Strasse 84<br>D-40239 Dusseldorf, Germany<br>FAX: +49/211/6214-161   |
| IFAC Workshop<br>Real Time Programming  | Nov.<br>9 - 13       | Miami, FL<br>USA          | 1 July<br>1995  | Dr. Phil Laplante, Dept. Math & Computer Sci.<br>Fairleigh Dickinson Univ., 285 Madison Ave.<br>Madison, NJ 07940, USA<br>FAX+1/201 593 8886, e-mail: laplante@fdu.edu                   |
| IFAC Symposium<br>Control of Power Plants and Power<br>Systems  | Dec.<br>6 - 8        | Cancun<br>Mexico          | 2 Dec.<br>1994  | Dr. Roberto Canales/SIPOWER '95<br>Instituto de Investigaciones Electricas<br>AP 475, Cuernavaca, Mor. 62000, Mexico<br>FAX +52/73/189 535<br>e-mail: Sifac@ieevms1.iiiecuer.unam.mx     |