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Newsletter

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IFAC Council- and Related Meetings Buenos Aires, Argentina, 4 - 7 Sept., 1989

This was the first time that the IFAC Council, the Boards and Committees met in the Southern Hemisphere. The meetings were held in Buenos Aires, in conjunction with the 6th IFAC Symposium on Mining, Mineral and Metal Processing, upon invitation of the Argentine Association of Automatic Control/AADECA, the Argentine NMO of IFAC.

Before the Council meeting on 7 September, the following IFAC bodies held their sessions: TC on Theory, TC on Social Effects of Automation; the International Program Committee of the 1990 IFAC World Congress; Awards Committee, Administrative and Finance Committee, Policy Committee, Publications Committee, Publications Managing Board, Automatica Editorial Board, Technical Board and Executive Board.

At the Council Meeting, the reports of the President, the Treasurer, the Secretary, the Technical Board Chairman and the Executive Board Chairman were unanimously approved. So was the draft budget 1990 as presented by the Treasurer.

The Council was informed by Past President M. Thoma about two new National Member Organizations, whose membership is effective as of 1 September, 1989: New Zealand and Hong Kong. Other engineering societies have applied to become National Member Organizations of IFAC, and their applications are just being handled by the appropriate IFAC bodies. As happy as IFAC is about the new NMOs in their ranks as much does it regret the fact that there are NMOs with prolonged non-payment of fees. In spite of all the efforts made by IFAC bodies and individuals in IFAC to help these NMOs to stay in IFAC, the procedure as outlined in the Constitution has to be followed.

In this context also, the Treasurer informed the Council about the sound finances of the Federation due to the income from publications. To be able to keep IFAC finances in this good shape the Council decided to recommend to the General Assembly to approve a slight increase of the membership fee to compensate for the inflation rate of the past years. It was noted that the membership fees have not been increased in the last six years.

The participants in the Council Meeting highly appreciated the efforts and dedication of the Secretariat and stressed how much they value its efficiency and output.

The Chairman of the Technical Board reported on the Master Plan of Symposia, emphasizing that, to avoid inflexibility, changes and addenda thereto will be discussed at every Technical Board Meeting. With regard to quality control of technical events, the TB Chairman stressed that better feedback from National Organizing Committees was to be sought and that the position of IPC members from IFAC's main sponsoring Technical Committees should be strengthened. Regarding lead times and better information to the IFAC community through the Newsletter it was decided that the application form for the organization of technical events should also contain the deadlines for paper submission.

Another important aspect of technical work related to the possibility of individuals to join into the activities of IFAC. The Council stressed that the IFAC Constitution provides sufficient scope for the involvement of individuals through Working Groups. In addition, everybody interested in IFAC activities can receive the Newsletter free of charge and

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IPC for Tallinn World Congress to Meet

The Third Meeting of the International Program Committee for the IFAC World Congress in Tallinn, 1990, will be held in Vienna, Austria, November 13 - 14, 1989, in conjunction with the Skill Based Automated Production Symposium. This last IPC Meeting before the Congress will deal with the final paper selection.

Using the opportunity of the presence of a large number of Technical Committee Chairmen and Committee members, also the Technical Board will hold a further meeting on 13 November and several Technical Committees will have their annual meetings in Vienna as well.

IFAC Council Meets Brazil NMO

By invitation of the Sociedade Brasileira de Automatica, the Brazil National Member Organization of IFAC, the President, President Elect, Vice Presidents, Treasurer, Secretary as well as other members of the Council met with representatives of the Brazil Engineering Society. Details of this very successful meeting will be published in one of the next issues of the IFAC Newsletter.

Special Issue of **AUTOMATICA** on Identification and System Parameter Estimation

Editors: P. Eykhoff (Guest Editor)
P.C. Parks

Vol. 26 No 1, Jan/Feb 1990

Survey Papers

Adaptation and Tracking in System Identification: A Survey
(L. Ljung)
Continuous-Time Approaches to System Identification: A Survey
(H. Unbehauen)

Papers

Generalized Binary Noise Test-Signal Concept for Improved Identification-Experiment Design
(H.J.A.F. Tulleken)
Consistent Parameter Estimation and Order Selection for Noncausal Autoregressive Models Via Higher-Order Statistics
(J.K. Tugnait)
Numerical Integration Approach to On-Line Identification of Continuous Systems in the Presence of Measurement Noise
(S. Sagara, Z.Y. Zhao)
A Review of k-Step-Ahead Predictors
(G. Favier, D. Dubois, C. Rougerie)
ESPION: An Expert System for System Identification
(M. Haest, G. Bastin, M. Gevers, V. Wertz)
Qualitative Aspects of the Distribution of Errors in Least Squares Estimation
(M.E. Salgado, C.E. de Souza, G.C. Goodwin)
A General Hankel-Norm Approximation Scheme for Linear Recursive Filtering
(A. Gombani, M. Pavon)
Parameter Identification in the Presence of Nonparametric Uncertainty
(J.M. Krause, P.P. Khargonekar)
On Covariance Function Tests Used in System Identification
(T. Soderstrom, P. Stoica)
Identification and Validation of Turbo-generator Models
(D.J.G. Morrell, B.W. Hogg)
Wave Estimation: A Model-Based Identification Approach
(J.V. Candy, E.J. Sullivan)

Brief Papers

The Effect of Rapid Sampling in System Identification
(B. Wahlberg)
The Frisch Scheme in Dynamic System Identification
(S. Beghelli)
Identifiability of the Deconvolution Problem
(A. Ahlen)

Book Reviews

Control and Dynamic Systems: Advances in Theory and Application by C.T. Leondes
(R. Kulhavy)
Modelisation et Identification en Traitement du Signal by M. Najim
(R.A. Vingerhoeds)
Lessons in Digital Estimation Theory by J.M. Mendel
(G. Giannakis)

IFAC Control Engineering Textbook Prize

At the IFAC World Congress in Tallinn, a prize will again be awarded for the best Control Engineering Textbook published in one of the official IFAC languages. Sfr 1.500.-- for the selected book will be awarded by the IFAC Textbook Prize Award Committee, and the prize will be presented at the World Congress. The recipient(s) of the award will be the author(s) of the textbook judged to have most contributed to the education of control engineers, the first edition of which occurred not later than the last Congress, (i.e. not later than June '87). Recommendations for the IFAC Control Engineering Textbook Prize are invited from the control engineering community.

Recommendations should be received before Dec. 31, 1989 by the chairman of the Textbook Prize Awards Committee:

Prof. D.P. Atherton
School of Engineering and Applied Sciences
Falmer, Brighton
Sussex BN1 9QT, UK

It would be most helpful to the Committee to have each recommendation accompanied by specific reasons. Your cooperation will be greatly appreciated. Please respond as soon as possible.

AUTOMATICA Prize Paper Awards

The IFAC Publications Managing Board will again award one thousand Swiss Francs for each of three outstanding contributions to the theory and/or practice of control engineering or control science.

These awards will be presented at the 1990 IFAC World Congress in Tallinn, USSR. They will be awarded for the three best papers published in any of the issues of AUTOMATICA in 1987, 1988 and 1989.

Recommendations for the awards are invited from the control engineering community. They should be received before 1 March 1990 by the chairman of the AUTOMATICA Prize Paper Awards Committee:

Prof. J.K. Åström
Lund Institute of Technology
Dept. of Automatic Control
Box 118
S-22 100 Lund
Sweden

It would be most helpful to the Committee to have each recommendation accompanied by a few reasons given, why the paper should be considered for the Prize Paper Award.

Control of Distributed Parameter Systems

IFAC/IMACS/IFIP Symposium Perpignan, F, 26 - 29 June, 1989

The fifth Symposium on Control of Distributed Parameter Systems was organized by the Automatic Control Group of the I.M.P., University of Perpignan and was held at the Palais des Congrès of Perpignan.

It was co-sponsored by AFCET, IFIP, INRIA and LAAS. The International Program Committee was composed of 30 members from 13 countries.

The meeting was opened by the chairman of the IPC, Professor J.L. Lions (Collège de France and CNES) and by the President of the University of Perpignan, Professor H. Got.

The international scope of the Symposium was illustrated by the fact that:

- 30 different countries were represented
- 11 invited sessions were organized by experts from Europe and the USA (about 30% of the papers).

The organizing committee was very specific in its intention to present only papers which deal with the specific issues directly affecting the control of distributed systems. About 131 papers were presented in four parallel sessions. Originally more than 170 papers had been submitted.

The first plenary lecture was given by Professor J.L. Lions and 7 other plenary talks were given successively by Prof. H.T. Banks (Providence, RI, USA), Prof. A. Bensoussan (INRIA, France), Prof. R.F. Curtain (The Netherlands), Prof. K.H. Hoffmann (FRG), Prof. N. Fujii (Japan), Prof. A.V. Balakrishnan (USA), Prof. M. Delfour (Canada).

The 123 papers presented were devoted to the following subject areas

- System Analysis (19)
- Control Theory (15)
- Flexible Systems (12)
- Identification (29)
- Application (6)
- Moving Domain and Shape Optimization (8)
- Inverse Technics in DPS, Non Linear Systems, Delay and Stochastic Systems, Modelling, Numerical Technics (13)
- Others

The Symposium has shown the progress not only in traditional developed methodological and pure research fields on control theory but also the rapid growth of its importance for different applications. This was the purpose which the organizers had set themselves.

The Symposium was the fifth in the series and the impression was that there is growing interest in the topic of control of DPS mainly by the new problems which excite researchers working in the following areas: Mathematics, automatic control, computer science and engineering.

Social highlights included a reception hosted by the Mayor of Perpignan, a banquet and a half day tour to the Coté Vermeille.

The Symposium proceedings containing the plenary and selected papers will be published by Pergamon Press.

The organization of the Symposium was very much facilitated by the fact that most of the researchers and experts in the field were connected via electronic mail.

A.El Jai
NOC Chairman

Newsletter of the "IFAC Beirat" in Austria

The IFAC Beirat in Austria was established in 1983 by the Austrian Ministry of Science and Research. The IFAC Beirat is a body of experts from science, the research industry and the public authorities which, among others, has the task to make the findings and results of automatic control, collected and disseminated worldwide by IFAC, known to Austrian industry. These findings are mainly presented at IFAC Workshops, Symposia and Conferences and are to be made available to interested parties in Austria in a suitable way. One step to achieve this is the Newsletter of the IFAC Beirat, informing about current topics in automation which are of interest to Austrian industry and about institutes and institutions dealing with these subjects as well as reports on IFAC meetings and a calendar of events.

An additional task of the IFAC Beirat is to allow Austrian scientists from Industry and University to participate in IFAC events by granting them financial support.

For further details, please contact

Prof. P. Kopacek
Department of Systems Technology and Automation
University of Linz
A-4040 Linz-Auhof
Austria

Dynamic Modelling and Control of National Economies IFAC/IFORS/IFIP/SEDC Conference Edinburgh, UK 26-29 June, 1989

It is widely acknowledged that the analysis of economic systems requires inputs from economics, probability and statistics, computing, dynamical systems and control, game and optimization theories. The problems of economics are difficult and the ever increasing arsenal of methods and theories developed within these disciplines are often helpful in pointing towards solutions. Over the last three decades, this interdisciplinary collaboration has been very fruitful. The symposia series on dynamic modelling and control of national economies was established in recognition of this fact.

This symposium was the sixth in a series which began in 1973 in Warwick (UK). The second was held in Vienna (Austria) in 1977; the third one was held in Warsaw (Poland) in 1980; the fourth in Washington D.C. (USA) in 1983; and the fifth in Budapest (Hungary) in 1986. The aim of the symposium was to bring together specialists from all the related disciplines and from different countries to discuss the developments in this interdisciplinary area. In addition, the symposium provided a forum in which new problems in economics were explored along with new and potentially useful solution concepts and techniques.

The papers in the conference gave a broad view of the area. The topics covered in invited and contributed sessions included energy models, national models, agricultural eco-

nomics, economic cycles, international economic policy coordination, global macroeconomics, world trade and exchange rates, game theory and differential games, time series, robust control methods, viability theory, artificial intelligence methods for economics, automatic differentiation. Perhaps the distinguishing feature of this symposium was the extent of papers on game theory and the international coordination of economic policy and papers on the use of artificial intelligence and computing techniques.

About 200 abstracts were submitted to the members of the IPC. About 140 papers were accepted by the IPC after reviewing the full papers. These were presented in forty four sessions, four sessions running parallel throughout the conference. The only plenary session was the address of the President of the Society of Economic Dynamics and Control to the success of the meeting. The meeting was attended by 140 participants from 23 countries.

We feel that this conference has contributed to the analysis of the economic systems and to the design of optimal economic policies and we look forward to the next symposium on the subject in the People's Republic of China in 1992.

B. Rustem
IPC Chairman

International Conflict Resolution Using Systems Engineering SWIIS

IFAC/UNESCO Workshop, Budapest, Hungary, 5 - 8 June, 1989

The IFAC Workshop on International Conflict Resolution Using Systems Engineering took place in Budapest, Hungary. The Workshop provided an opportunity for updating and reporting some of the work that has taken place by control and systems engineers and others to seek supplemental ways, besides predominantly military ways, for resolving international conflicts. During the past six years many changes have taken place as people, skilled in various areas such as political sciences, economics, social studies, modelling and simulation, artificial intelligence and expert systems, military strategy and weaponry, as well as private business and industry have worked to reduce the likelihood of a major military war between the USSR and the USA.

The 25 participants in this 1989 IFAC/SWIIS Workshop came from 12 countries and presented 25 papers on different aspects of the Workshop. In addition, contributions came from UNESCO and the United Nations Secretariat. Representatives from Less Developed as well as from More Developed Countries participated in the Workshop. Consideration of the East-West as well as North-South issues were discussed in a cordial and constructive fashion.

Since the previous Workshop on International Conflict Resolution in 1986 in Cleveland, USA, many significant changes have taken place which have served to create a

much more favourable environment for constructive efforts to take place in the field of international conflict resolution:

The lead of Mikhail Gorbachev and his book Perestroika, with its emphasis on restructuring and openness, have helped to make possible constructive unilateral and multilateral agreements for significantly reducing the military forces of some major national world powers.

There has been increasing acceptance of the idea that common security, rather than national security, should provide a set of references or objectives for nations as they seek to improve international stability.

Global modelling efforts in Japan, the USSR and the USA are being used and compared with one another in terms of their response to various scenarios.

Data gathering efforts on past and current conflicts are being carried out and increased efforts at analyzing current national and international conflicts are being planned.

The systems engineering approach to the design and construction of an international information system to increase the likelihood of international stability and peace indicates that a Cooperative Security System be put into place that will provide international decision makers with timely and useful information to help them resolve international con-

licts without war. To realize such a Cooperative Security System, the following worthwhile activities are suggested to be undertaken to receive additional emphasis:

There should be an increased level of international information exchange derived from the results of using some of the global models which currently exist, as well as using modified models as may be required.

More study of the conflict resolution processes and activities in various countries, as viewed by practitioners from different disciplines is needed.

Conflict resolution in terms useful to less developed countries, as well as more developed ones, should be identified and more generally taught as part of the general education process.

An increased effort should be made to incorporate into IFAC conflict resolution meetings, people who are engaged essentially full time in conflict resolution and peace-making activities.

Plans have been identified for continuing efforts to implement these suggested activities for advancing international stability and peace in the future.

Harold Chestnut
IPC Chairman

Expert, Knowledge Based Systems

Performance Monitoring in Expert Control Systems
(R. Doraswami, J. Jiang)
An Architecture for Expert System Based Feedback Control
(K.E. Arzen)
Knowledge Based Dialogue for Dynamic Systems
(J.L. Alty, G. Johannsen)

Papers

Near Time-Optimal Control of Racing Vehicles
(D. Metz, D. Williams)
Properties of Generalized Predictive Control
(D.W. Clarke, C. Mohtadi)
Adaptive Motion Control of Rigid Robots: A Tutorial
(R. Ortega, M.W. Spong)
On the Robustness of Adaptive Controllers Using Relative Deadzones
(T.H. Middleton, G.C. Goodwin, Y. Wang)
Optimal Selection of Buffers in a Tandem Finite Capacity G/M/1 Queuing System
(B. Pourbabai)
Sample Path and Performance Homogeneity of Discrete Event Dynamic Systems
(S. Li, Y.C. Ho)

Brief Papers

Synthesis of Open Loop Controls for Semi-batch Copolymerization Reactors by Inverse Feedback Control Method
(K.Y. Choi, D.N. Butala)
On a Class of Stabilizing Partially Decentralized Controllers
(J.B. Moore, L. Xia)
Stability and Performance Robustness for Multivariable Linear Systems (R.I. Badr, M.F. Hassan, J. Bernusson, A.Y. Bilal)
Robustness of Adaptive Control Without Deadzones, Data Normalization or Persistence of Excitation
(C. Wen, D.H. Hill)
Theoretical Properties of Sign Change Criteria for Robust Off-Line Estimation
(E. Walter, L. Pronzato, A. Venot)

Book Reviews

Singular Perturbation Methods in Control by P. Kokotovic, H.K. Khalil and J.O'Reilly
(B. Lennartson)
Multivariable Control - A Graph Theoretic Approach by K.J. Reinschke
(F.J. Evans)
Multivariable Control for Industrial Applications by John O'Reilly (Editor)
(M. Thoma)
Sensors and Controls in the Analysis of Distributed Systems by A. El Jai and A.J. Pritchard
(D. Franke)

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can be included into a database of the IFAC Secretariat to receive material on IFAC sponsored technical events in his/her field(s) of interest. These services are free and open also to persons from non-IFAC member countries.

In the discussion of IFAC's publication policy, particular reference was made to the question of Specialist Journals, long-term publication policies and the structure of the publications management.

As IFAC now sponsors several awards, an Awards Charter was adopted by the Council. Details for the Outstanding Service Award were finalized.

In its endeavour to promote control engineers from developing countries, the Council agreed to include sfr 5.000 into its 1990 budget for this purpose. In order to secure continuity in the operation of the Committee for the Support of Control Engineering Education in Developing Countries, the Council agreed to a change in composition of this Committee, appointing a chairman for the triennium instead of having the EDCOM chairman serve ex-officio.

In time for the next General Assembly in Tallinn, the IFAC Constitution and By Laws will be carefully screened to see whether any changes are required that have to be adopted by the General Assembly.

The organizers of the next IFAC World Congress in Tallinn reported on the status of paper submission. By 1 September, 1,348 papers had been submitted to the IPC of the Tallinn Congress. The Third Announcement with the technical program will be published this December. The registration fee will be sfr 550 before 1 March, 1990 and sfr 650 after that date.

Brief reports were also given on the state of preparation of the World Congress in Sydney in 1993 and San Francisco 1996.

In a Closed Council Meeting, the Council members voted on the venue of the 1999 Congress. The result was that the People's Republic of China will host the IFAC World Congress in 1999. Prof. Y.Z. Lu, Council Member of IFAC at present, was proposed as President for this period by the Chinese NMO.

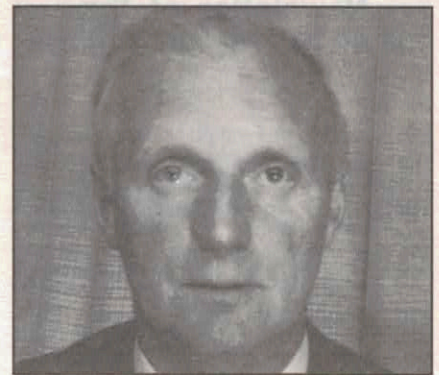
The Elections Committee submitted its list of candidates for the 1990 - 1993 triennium to the Council. These proposals were accepted and the list of candidates will subsequently be sent to the National Member Organizations.

During the Council Meeting in Buenos Aires, representatives of the host NMO informed the participants about Argentine activities in control engineering. Representatives of other Latin American NMOs (Brazil and Chile) addressed the meeting as well. A detailed report will be published in one of the next issues of the IFAC Newsletter.

The next Council- and Related Meetings will be held in Tallinn in conjunction with the 1990 World Congress.

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.

WHO IS WHO IN IFAC



Prof. D.P. Atherton
Chairman of TC on Education

Derek Atherton studied at the University of Sheffield, where he received a BEng degree in Electrical Engineering, and at Manchester, where he received a PhD in 1962. He also received a DSc from Manchester in 1976. He was a lecturer at Manchester from 1960-62 before moving to Canada as an Assistant Professor at McMaster University in Hamilton. In 1964 he moved to the University of New Brunswick where he was promoted to full Professor in 1969. He took up his present position as Professor of Control Engineering at the University of Sussex, England in 1980. Whilst in Canada he became active in IFAC and served on the Canadian National Member Organization for several years, being its Chairman from 1976-78. He was IPC chairman for the IFAC Symposium on Multivariable Technological Systems which was held at the University of New Brunswick in 1977. He has served on the Theory, Space, DECOM and EDCOM Committees of IFAC and currently serves as Chairman of EDCOM.

D. Atherton is an active member of several professional organizations and is currently President Elect of the Institute of Measurement and Control, Chairman of the UKAC, an editor of the Institute of Electrical Engineers Control Engineering Book Series and co-editor of Control-Theory and Advanced Technology.

Prof. Atherton's major research interests are in nonlinear control, computer-aided control system design, signal processing, simulation and applications of parallel processing. He has served on Control Research Committees both in Canada and the UK, has been author or co-author of three books and over 100 papers, and has worked on several projects as a consultant, either to government or industry.

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FORTHCOMING EVENTS

1989
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Title	1989	Place	Deadlines	Further Information
IFAC Workshop Distributed Databases in Real Time Control	October 16-18	Budapest Hungary	-	Dr. E. Knuth Computer and Automation Inst. HAS, BP 63, H-1502 Budapest Hungary
IFAC Workshop Evaluation of Adaptive Control Strategies in Industrial Applications	October 16-20	Tbilisi USSR	-	Acad. V.A. Trapeznikov 65 Profsojuznaja Street SU-117806 Moscow, USSR
IFAC/IFIP Workshop Real Time Programming	October 20-22	Berlin GDR	-	WRTP '89 Kammer der Technik, WGMA Clara Zetkin Str. 115/117 DDR-1086 Berlin, GDR
IFAC/IFORS/IAEE Symposium Energy Systems, Management and Economics	October 25-27	Tokyo Japan	-	ESME '89 Secretary, Dr. Kenji Yamaji Central Research Institute of Electric Power Industry 1-6-1 Ohtemachi, Chiyoda-ku Tokyo 100, Japan
IFAC Workshop Production Control in Process Ind.	Oct.30- Nov. 2	Kyoto Japan	-	Prof.T. Takamatsu, Kyoto Univ. Japan Institute of Systems Research, 4, Yoshida-Ushino- miya Sakyō, Kyoto 606, Japan
IFAC Symposium Low Cost Automation: Techniques, Components & Instruments, Applications	Nov. 8-10	Milan Italy	-	IFAC-LCA '89 Secretariat Dip. Informatica e Sistemistica Via Eudossiana 18 I-00184 Rome, Italy
IFAC/IFIP/(IMACS) Symposium Skill Based Automated Production	Nov. 15-17	Vienna Austria	-	Prof.P. Kopacek Dept. of System.Tech& Automation, University of Linz A-4040 Linz-Auhof, Austria
IFAC/IFIP Workshop Safety of Computer Control Systems - SAFECOMP '89	Dec. 5-7	Vienna Austria	-	Prof. P. Kopacek Dept. of System. Techn.& Automation, University of Linz A-4040 Linz-Auhof, Austria
Title	1990	Place	Deadlines	Further Information
IFIP/IFAC Intl. Conference Modelling the Innovation Communications, Automation & Information Systems	March 21-23	Rome Italy	-	Conf.Secr. c/o Dr. A. Tornambé Fondazione Ugo Bordoni via Baldassare Castiglione 59 I-00142 Rome, Italy
JSME/IFAC Intl. Conference Manufacturing Systems & Environment Looking Towards the 21st Century	May 29 June 1	Tokyo Japan	-	T. Nakajima, The Japan Society of Mech.Eng., Sanshin Hokusei Bldg, 4-o Voyogi 2-chome Shibuya-ku, Tokyo 151, Japan
INRIA/IFAC/IEEE/SIAM 9th International Conference Analysis and Optimization of Systems	June 12-15	Antibes France	Oct. 1 1989	INRIA, Service des Relations Exterieures, Domaine de Volluceau, Rocquencourt, BP 105, F-78153 Le Chesnay Cedex, France
IFORS/IFIP/IFAC Int. Conf. Economics and AI CECOIA II	July 2-6	Paris France	*	AFCET-CECOIA, 156, bd Péreire F-75017 Paris, France

FORTHCOMING EVENTS (ctd.)



XI IFAC WORLD CONGRESS
AUTOMATIC CONTROL AT
THE SERVICE OF MANKIND
August 13 - 17
Tallinn USSR

IFAC 90
Institute of Cybernetics
Akadeemia tee, 21,
200108 Tallinn, USSR

IMEKO/IFAC Conference
 Measurement in Clinical Medicine
 August 29-31
 Sopron Hungary
 Jan.15 1990
 6th IMEKO Conf. on Biomedical Engineering
 Mérőtechnikai és Automatizálási; Tudományos
 Egyesület; POB 457, H-1372 Budapest, Hungary

Title	1991	Place	Deadlines	Further Information
IFAC/IEEE/IFIP/IMEKO Symp. Intelligent Tuning and Adaptive Control	Jan. 15-17	Singapore	*	Dr. Kang Chang Guan, Instr. & Control Society, 1 Science Park Drive, Nr 61 A; The Fleming, Singapore Science Park, Singapore 0511
IFAC/(IFIP) Workshop Computer Software Structures Integrating AI/KBS Systems in Process Control	May 29-31	Bergen	*	N.P. Sundby, Norwegian Soc. of Automatic control Kronprinsensgate 17 N-0251 Oslo, Norway
IFAC Workshop Electric Power Systems Control Centers	June 17-20	Semmering Austria	*	K. Schenk, Senior Director, Siemens Österreich AG Gudrunstr. 11, A.1101 Vienna, Austria
IFAC/IFORS Symposium Identification & System Parameter Estimation	July 8-13	Budapest Hungary	*	G. Hencsey, Computer&Autom. Inst., HAS, Kende u. 13-17 H-1111 Budapest, H
IFAC Symposium Distributed Intelligence Systems DIS '91	Aug. 13-15	Washington D.C., USA	*	A.H. Levis, MIT 35-410/LIDS, Cambridge, MA 02139, USA
EFMI/IIASA/IFAC Intl. Conference Medical Information Systems and Expert Systems	Aug. 19-22	Vienna Austria	*	K.P.Adlassnig, MIE'91 Secr. General c/o Inst. f. Medizin. Computerwissenschaften Garnisong. 13, 8.Hof A-1090 Vienna, Austria
IFAC Symposium Design Methods of Control Systems	Sept. 4-6	Zurich CH	*	Prof. F. Kraus, ETH Zentrum ETL, CH-8092 Zurich Switzerland
IFAC Symposium Fault Detection, Supervision and Safety for Technical Processes SAFEPROCESS '91	Sept. 10-13	Baden-Baden FRG	*	R.Isermann, Inst. f. Regelungs- technik, TU Darmstadt, FB 19 Schlossgraben 1 D-6100 Darmstadt, FRG
IFAC/IFIP/IMACS Symposium Robot Control, SYROCO '91	Sept. 16-18	Vienna Austria	*	Prof. I. Troch, TU Vienna Wiedner Hauptstr. 6-10, 1040 Vienna, Austria
IFAC Symposium Advanced Control of Chemical Processes ADCHEM '91	Oct.	Toulouse France	*	Prof.K. Najim, Ecole Nationale Supérieure d'Ingénieurs de Génie Chimique Chemin de la Loge F-31078 Toulouse Cedex, France

Title	1992	Place	Deadlines	Further Information
IFAC/(IFORS) Workshop Support Systems for Decision and Negotiation Processes	June	Warsaw Poland	*	R. Kulikowski, System Res.Inst. Nowelska 6, PL-01 447 Warsaw Poland
IFAC Symposium Adaptive Control and Signal Processing	July 1-3	Grenoble France	*	L. Dugard, Lab d'Automatique de Grenoble-ENSIEG, BP 46 F-38402 St. Martin d'Hères, France

* not yet known
 - past