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## Soon We Meet Again IFAC '90 Congress in Tallinn

The Estonian capital is looking forward to meeting its guests at the 11th IFAC World Congress. Spring has come to Estonia with new hopes: A successful IFAC Congress among them.

Twelve volumes of the IFAC'90 preprints are in preparation. Thanks to the one-step procedure, all the accepted submitted papers are available in camera-ready form and will be published.

At the Tallinn Congress Centre, 12 session rooms and several meeting rooms are ready for their guests and equipped with slide projectors and overhead projectors. In one of the rooms you can use a VHS video system and, in another one the demonstration of some education software on PC/ATs will be organized. As we have been informed by the chairman of the Education Committee, Prof. D.P. Atherton, some software will be available at a relatively small charge. Those who wish to take advantage of this should bring some 5 1/2 " diskettes with them.

Four technical visits and some sight-seeing tours will be organized to give you an impression of life in Estonia.

The Organizing Committee invites you to attend the IFAC'90 Congress, to present your accepted paper, to listen to the presentations, participate in case-study and discussion sessions and to enjoy the social program of the Congress. For visa application, just take your Final Program together with the Registration Form to the Soviet Embassy in your country. This is sufficient as invitation.

To make first contacts in Tallinn easier for you, here are some of the organizers of the IFAC'90 Congress.



Ants Work  
NOC Vice-Chairman



Marje Tamm  
Registration



Ingrid Reelend  
Secretariat



Riina Varts  
Secretariat

# New Publications

## Proceedings of the IFAC Symposium Adaptive Systems in Control and Signal Processing

Glasgow, UK, 19 - 21 April, 1989

Editors: M.A. Johnson, M.J. Grimble, Industrial Control Unit; D.H. Owens, Division of Dynamics and Control; T.S. Durrani, Division of Signal Processing, University of Strathclyde

The Symposium covered three major areas: adaptive control, identification and signal processing. In all three, new developments were discussed covering both theoretical and applications research. Within the subject area of adaptive control, the discussion centred around the challenges of robust control design to unmodelled dynamics, robust parameter estimation and enhanced performance from the estimator, while the papers on identification took the theme of it being a bridge between adaptive control and signal processing. The final area looked at two aspects of signal processing: recursive estimation and adaptive filters.

## Proceedings of the IFAC Symposium Control of Distributed Parameter Systems

Perpignan, France, 26 - 29 June, 1989

Editors: M. Amouroux, A. El Jai, Laboratoire d'Automatique, University of Perpignan

This volume presents state-of-the-art reports on the theory, and current and future applications of control of distributed parameter systems. The papers cover the progress not only in traditional methodology and pure research in control theory, but also the rapid growth of its importance for different applications. This title will be of interest to researchers working in the areas of mathematics, automatic control, computer science and engineering.

## Proceedings of the IFAC/IFORS/IMACS/IEEE International Conference Advanced Information Processing in Automatic Control AIPAC'89

Nancy, France  
3 - 7 July, 1989

Editor: R. Husson, Centre de Recherche en Automatique de Nancy

Information Processing is a key area of research and development and the symposium presented state-of-the-art reports on some of the areas of relevance in automatic control: fault diagnosis and system reliability. Papers also covered the role of expert systems and other knowledge based systems, which are needed to cope with the vast quantities of data generated by large scale systems. This volume should be considered essential reading for anyone involved in this rapidly developing area.

## Proceedings of the IFAC Symposium Automatic Control in Aerospace

Tsukuba, Japan, 17 - 21 July, 1989

Editor: T. Nishimura, Institute of Space and Astronautical Science, Japan

The papers presented at the Symposium covered the areas in aerospace technology where automatic control plays a vital role. These included navigation and guidance, space robotics, flight management systems and satellite orbital control systems. The information provided reflects the recent developments and technical advances in the application of automatic control in space technology.

## Proceedings of the IFAC Symposium Power Systems and Power Plant Control

Seoul, Korea, 22 - 25 August, 1989

Editor: U. Ahn, Korea Electrotechnology Research Institute

The control of power systems and power plants is a subject of growing interest which continues to sustain a high level of research, development and application in many diverse yet complementary areas, such as maintaining a high quality but economical service and coping with environmental constraints. The papers included within this volume provide the most up to date developments in this field of research.

## Informal Meeting of the IFAC Presidents Laxenburg, Austria April 26 - 28, 1990

At the end of April, the 12th Informal Meeting of the IFAC Presidents was held in Laxenburg at the IFAC Secretariat. The participants, Prof. B. Tamm, Prof. B.D.O. Anderson, Dr. S. Kahne, Prof. L. Ljung, Prof. M. Mansour and Dr. G. Hencsey looked at matters concerning the meetings of the forthcoming General Assembly and the Council to be held in Tallinn. Special attention was given to the preparation of the 11th IFAC World Congress. On behalf of the Tallinn organizers, NOC Vice-Chairman, Prof. A. Work, informed the participants and reported that the preparations are well under control.

As is usual on these occasions, the IFAC Presidents used the opportunity to take a close look at the operation of the Secretariat.

Two items that were discussed very intensively were the "IFAC Affiliate Scheme" and the publications policy of our Federation. Both questions - how to open the doors more widely to individuals and how to handle the publications as they are one of the most important outputs of IFAC - are extremely significant for our future.

Outside the meeting schedule the President, Prof. Boris Tamm, invited representatives of Austria's scientific community as well as of the Austrian Federal Ministry of Science, of the

## Proceedings of the IFAC/IFORS/IMACS Symposium Information Control Problems in Manufacturing Technology

Madrid, Spain  
26 - 29 September, 1989

Editors: E.A. Puente, Departamento de Automatica Ingenieria Electronica e Informatica Industrial, Polytechnical University of Madrid; L. Nemes, CSIRO Division of Manufacturing Technology, Australia

The Symposium presented and discussed the latest research on new theories and advanced applications of automatic systems, which are developed for manufacturing technology or are applicable to advanced manufacturing systems. The topics included computer integrated manufacturing, simulation and the increasingly important areas of artificial intelligence and expert systems, and applied them to the broad spectrum of problems that the modern manufacturing engineer is likely to encounter in the design and application of increasingly complex automatic systems.

For further details and pricing information please contact

Marketing Department  
Pergamon Press plc  
Headington Hill Hall  
Oxford OX3 0BW, UK

Academy of Sciences, the Austrian NMO and the IFAC Beirat to a dinner.

The Presidents also had the opportunity to give lectures at the IASA and at the Technical University of Graz in the framework of a visit to this city and its university.

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# Low Cost Automation - LCA'89

## Techniques, Components & Instruments, Applications

**IFAC Symposium**  
Milan, Italy, 8 - 10 Nov, 1989

# Production Control in Process Industry

**IFAC/IFORS Workshop**  
Tokyo, Japan, 30 Oct. - 2 Nov., 1989

The definition of production control adopted for this workshop covers a wide range of technical fields such as production planning, quality control and quality assurance, operational control and maintenance strategy. In order to assist managers in taking decisions on production control, an integrated approach towards these hard-core disciplines is required.

In five technical sessions, invited speakers from process industries sketched their specific problems in ensuring optimal production economics and the problem areas, and a panel of experts from various disciplines gave their comments. The contributed papers were represented in two poster sessions. The second half of the workshop held at a refinery and at a car parts manufacturing plant in Nagoya considered plant site problems. This unique workshop feature allowed technical sessions to be actually discussed on site.

In the final discussion some requests to hold a further workshop in this area were made.

T. Takamatsu, NOC Chairman

## Technical Diagnostics '89

### IMEKO/IFAC Workshop

Prague, CSSR, 31 May - 2 June, 1989

The Technical Diagnostics Symposium '89 was held in the Palace of Culture in Prague, Czechoslovakia.

This event was sponsored by IMEKO TC 10 and co-sponsored by the IFAC Technical Committee on Biomedical Engineering and Control.

Technical diagnostics is a new scientific and technical branch which solves problems of the rationalization of the operation and maintenance of the repairable devices and systems. The economic results of the introduction of technical diagnostics into the operation of unique and expensive equipment are remarkable and the savings of operational costs are comparable with the initial costs of the equipment.

During the opening ceremony, Josef Kozak, the chairman of IMEKO TC 10 welcomed the participants. The participants were then addressed by Dr. Dagmar Trkalova, President of the CS Committee of Applied Cybernetics. Dr. Trkalova mentioned the development of technical diagnostics in Czechoslovakia, the importance of this for the national economy and liaisons with IMEKO in this sector.

The importance of the Symposium was also underlined by the presence of Dr. Tamas Kemeny of Budapest, the Secretary General of IMEKO.

The program of the Symposium was arranged in two parallel sessions with 10 paper sessions and 3 interactive sessions/posters. In total about 110 papers were presented by authors coming from 13 countries.

The Symposium was attended by 123 specialists from Czechoslovakia and by 93 specialists from 14 countries.

J. Kozak, IPC Chairman



Panel at the opening of the Symposium

The Second IFAC Symposium on Low Cost Automation LCA'89 was attended by 170 participants from 19 countries, among which there were 60 coming from Italy, the host country.

It was sponsored by the IFAC Technical Committees on Components and Instruments, and co-sponsored by the TCs on Applications, Education and Developing Countries, with the cooperation of the local institutions mentioned below. The Symposium was organized by the Department of Computer and Systems Sciences, University of Rome "La Sapienza", with the support of the National Council of Research, the University of Rome and ANIE, ANIPLA, ENEL and ENEA. The aim of the meeting was to evaluate the possibilities of low cost approaches (techniques, components and instruments, applications) for the development of reliable, multipurpose and easy-to-apply systems.

The International Program Committee was composed of 28 members from 18 countries. A total of 154 abstracts were submitted from which a selection of 120 papers was included in the technical program. The technical sessions were organized in 3 parallel sessions, covering the following topics:

- Self tuning, adaptive and robust control
- PID controllers
- Modelling; and CAD
- Instrumentation
- Sensors and actuators
- Electric motor drives
- Robot controllers
- Reliability, failure detection
- Modelling; CAD
- Education

- Applications in manufacturing, agriculture, chemical, small and medium factories and general purpose control strategies.

Most of the papers showed applications or were applications-oriented.

The main lines of the Symposium were presented and discussed in the framework of six invited plenary sessions developed by the invited speakers Prof. P. Albertos (Low Cost Automation Issues), Prof. B. Wittenmark (Theory as a Part of Low Cost Automation), Prof. H.R. Traenkler (Trends in Intelligent Measurement), Prof. S. Rinaldi (From Empirical Management to Automation), Prof. W. Schaufelberger (Low Cost Control Education Software for PCs) and Prof. M. Silva (Logical Controllers).

Two round table sessions were also included in the technical program. The first one, chaired by Prof. Leskiewicz, dealt with reliability, maintainability and availability issues in the framework of low cost automation, the second one, chaired by Prof. M. Najim, dealt with low cost automation as a way to technology transfer.

The general impressions after the meeting were that low cost automation is a way to increase the distribution of automation.

The Symposium location, the Congress Center "Palazzo delle Stelline" offered the best atmosphere to exchange experience. Feedback from participants indicated that the Symposium was a full success.

A. de Carli, NOC Chairman  
P. Albertos, IPC Chairman

## Papers From the Next Issue – July 1990

### Survey Paper

Structure Identification of Nonlinear Dynamic Systems - A Survey on Input/Output Approaches  
(R. Haber, H. Unbehauen)

### Papers

Rudder Roll Stabilization for Ships  
(J. van Amerongen, P.G.M. van der Khugt, H.R. van Nauta Lemke)

Autotuning for Model-Based Predictive Control  
(W.R. Cluett, E. Guberhansingh)

Adaptive Stability Augmentation  
(B. Wittenmark)

An Algorithm for the Adaptation of a Robust Controller to Reduced Plant Uncertainty  
(O. Yaniv, P.O. Gutman, L. Neumann)

Analysis and Simulation of Strong Earthquake Ground Motions Using ARMA Models  
(Th.D. Popescu, S. Demetriu)

Identification Problems in Distributed Parameter Neuron Models  
(A.K. Schierwagen)

Frequency Domain Conditions for Parameter Convergence in Multivariable Recursive Identification  
(M. de Mathelin, M. Bodson)

Identification of Stochastic Time Lag Systems in the Presence of Colored Noise  
(W-X. Zheng, C-B. Feng)

### Brief Papers

Laguerre-Based Adaptive Control of pH in an Industrial Bleach Plant Extraction Stage  
(G.A. Dumont, C.C. Zervos, G.L. Pageau)

Design of Decentralized Observation Schemes for Large-Scale Interconnected Systems: Some New Results  
(M.K. Sundareshan, R.M. Elbanna)

Evaluation of a Pattern Recognition – Adaptive PID Controller  
(R. Cao, T. McAvoy)

SEX1: An Expert Identification Package  
(S. Gentil, A.Y. Barraud, K. Szafnicki)

Internal Representation, Internal Model, Human Performance Model and Mental Workload  
(H.G. Stassen, G. Johannsen, N. Moray)

### Book Reviews

Nichtlineare und Adaptive Regelungssysteme, by J. Bocker, J. Hartmann & C. Zwanshig  
(H. Nijmeijer)

Controlling Electrohydraulic Systems, by W.R. Anderson  
(E.O. Doebelin)

Systems Modeling and Computer Simulation, by N.A. Kheir  
(J. Dastych)

Feedback Control Systems, by C.L. Philips & R.D. Harbor  
(J.C. West)

## Control Applications of Nonlinear Programming and Optimization

**IFAC Workshop**  
**Tbilisi, USSR, 16 - 20 October, 1989**

The goal of this Workshop was to exchange ideas between scientists who apply nonlinear programming and optimization to real world control problems and those who develop new methods and algorithms and software.

The attendance to the Workshop was 49 participants from eight countries. Two invited lectures and 22 contributed papers were presented. The invited speakers were Prof. A. Miele and Prof. I. Troch.

The Workshop covered various optimization problems of control systems. It was opened by the highlight invited lecture of Prof. A. Miele (USA) dealing with the advances in windshear research. This was followed by very interesting presentations, the first one by Prof. R. Bulirsch (FRG) summarizing some new simulation results on windshear, and the second by Dr. K. Well (FRG) dealing with ARIANE V ascent trajectory optimization. Prof. I. Troch (Austria) gave a survey talk on optimal control of constrained systems, and Prof. F. Pfeiffer (FRG) presented recent results on robotics by using a geometric approach. Prof. J. F. Pommaret (France) exhibited another way of solving the important problem of controllability.

The applications concerned the optimal control for robots, the optimization of space vehicles trajectory, of urban traffic control, of control of general mechanical systems, of serial multi level inventory systems and of a short term hydro thermal-scheduling. Some papers dealt with robust control.

The Workshop benefited from the sponsorship of the International Federation of Automatic Control (IFAC) through their Technical Committees on Applications, Theory and Mathematics of Control and the Association Française pour la Cybernetique Economique et Technique (AFCET) and the Centre National de la Recherche Scientifique (CNRS).

Dr. H. Siguerdidjane  
NOC Chairman

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## WHO IS WHO IN IFAC



Dr. Robert Genser  
EMSCOM Chairman

Dipl.-Ing. Dr. techn. Robert Genser received his academic degrees from the Technical University in Graz, Austria, Faculty of Electrical Engineering in 1960 and 1965 respectively.

He was assistant in research and teaching at the Technical University in Graz, working in the fields of network theory, automatic control, electric railways, construction and operation of electrical plants, high voltage engineering, biomedical engineering as well as systems engineering. In addition he was lecturer on control theory.

From 1965 to 1967 and 1970 to 1971 he was at the Department of Applied Mathematics and Physics at Kyoto University in Japan.

Since 1971 with the Austrian Federal Railways, he was engaged in the design of electronic data processing systems for inventory control, workshop capacity planning and scheduling. From 1982 to 1988 he worked at the Ministry responsible for Economy and Transport. There he was a member of the project management for the Austrian Transport Concept. In particular he concerned himself with the subjects energy and resources, telecommunication and information systems and safety in transportation, thus having a great impact by his experience in systems engineering. At present he is technology observer at the Austrian Federal Railways. In 1979 he was guest researcher of the Japan Society for the Promotion of Science at the University of Kyoto, working in the field of self-organizing control systems for safety in railway operation.

In IFAC, Dr. Genser was organizer of the Working Group on Transportation Systems, whose chairman he was from 1973 to 1978. From 1978 - 1981 he was Secretary of SECOM, from 1981 to 1987 vice-chairman of EMSCOM whose chairman he is at present.

Dr. Genser is Senior Member of IEEE and served as vice-chairman of the IEEE Austrian section from 1980 to 1989. The IEEE Centennial Medal was awarded to him. He is also an active member of the Technical Committee on Safety, Security and Reliability of the European Workshop on Industrial Computer Systems, Austrian representative of the COST, Group of Transport, Computers and Telecommunications and, on behalf of the Austrian Transport Concept, of the UN/ECE Working Party 4 (Trade Facilitation) where he deals with EDIFACT.

Since 1980, Dr. Genser has been an associate editor of Transport Reviews, London.

Dr. Genser's publications include papers on systems engineering, optimization of railways, learning systems, decision making, telecommunication and micro-electronics in transportation, and project management.



# FORTHCOMING EVENTS

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Title	1990	Place	Deadlines	Further Information
IFORS/IFIP/IFAC Int. Conf. Economics and AI CECOIA II	July 2-6	Paris France	-	Dr. P. Bourguine, CEMAGREF 26, rue St. Louis F-78000 Versailles, France
International Symposium (4th) Differential Games and Applications	Aug. 9-10	Helsinki Finland	-	Harri Ehtamo, Systems Analysis Lab, Helsinki University of Technology, Otakaari 1 M SF-02150 Espoo, Finland
<b>XI IFAC WORLD CONGRESS AUTOMATIC CONTROL IN THE SERVICE OF MANKIND</b>	<b>August 13-17</b>	<b>Tallinn USSR</b>	-	<b>IFAC 90 Secretariat Institute of Cybernetics Akadeemia tee 21 200108 Tallinn, USSR</b>
IFIP/IFAC Conference (3rd) Interact '90	August 27-31	Cambridge UK	-	Ms. Karyn McCartney INTERACT '90, The British Computer Society, 13 Mansfield Street, London W1M 0BP, UK
IMEKO/IFAC Conference Measurement in Clinical Medicine	August 29-31	Sopron Hungary	-	6th IMEKO Conf. on Biomedical Engineering Méréstechnikai és Automatizálási Tudományos Egyesület POB 457 H-1372 Budapest, Hungary
IMACS/(IFAC) Intl. Symposium Mathematical and Intelligent Models in System Simulation	Sept. 3-7	Brussels Belgium	-	MIM-S <sup>2</sup> '90, Lab d'Automatique CP 165-U.L.B., 50, Ave F.D. Roosevelt, B-1050 Brussels, Belgium
IFAC/EWICS/IFIP Symposium SAFECOMP'90 - Safe, Secure Computing	Oct. 30 - Nov. 2	Gatwick UK	-	Prof. B. Daniels, NCC, The National Centre for Information Technology, Oxford House Oxford Road, Manchester M1 7ED, UK
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 Workshop Modelling and Experimental Verification of Dynamics and Control of Flexible Aerospace Structures	April 2-4	Huntsville AL, USA	*	Dr.S.M. Seltzer, Control Dynam. Company, Office Park South Suite 304, 600 Blvd South Huntsville, AL 35802, USA
IFAC/(IFIP) Workshop Computer Software Structures Integrating AI/K BS Systems in Process Control	May 29-31	Bergen	Dec.15 1990	N.P. Sundby, Norwegian Soc. of Automatic Control Kronprinsensgate 17 N-0251 Oslo, Norway
IFAC Workshop Electric Power Systems Control Centers	June 19-21	Semmering Austria	Nov.30 1990	K. Schenk, IFAC Control Centre WS Siemens Österreich AG Gudrunstr. 11, A-1101 Vienna, Austria
IFAC Conference Advances in Control Education	June 24-25	Boston, MA USA	Aug.19 1990	Prof.M.Rabins, Mech.Engg.Dept Texas A&M Univ. College Station, TX 77843-3123, USA
IFAC/IFORS Symposium Identification & System Parameter Estimation	July 8-12	Budapest Hungary	July 15 1990	Ms. Eva Soos, Computer&Autom. Inst., HAS, Kende u. 13-17 H-1111 Budapest, Hungary
IFAC/IFIP/IMACS Symposium (5th) Computer Aided Design in Control & Engineering Systems	July 15-17	Swansea UK	Sept.15 1990	Prof.H.A. Barker, Dept. of Elect. Electronic Engg., Univ. College of Swansea, Singleton Park Swansea SA2 8PP, UK
IFAC Symposium Distributed Intelligent Systems DIS '91	Aug. 13-15	Washington DC USA	Sept.22 1990	Prof. A.H. Levis LIDS 35-410, M.I.T 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

# FORTHCOMING EVENTS (ctd.)



Title	1992	Place	Deadlines	Further Information
IFAC Symposium Design Methods of Control Systems	Sept. 4-6	Zurich Switzerland	*	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	June 15 1990	VDI/VDE GMA Safeprocess 91 POB 1139, Graf Recke Str. 84 D-4000 Düsseldorf 1, FRG
IFAC/(IFIP)/IMACS Symposium Robot Control SYROCO '91	Sept. 16-18	Vienna Austria	Oct.15 1990	ÖPWZ Rockgasse 6 A-1014 Vienna, Austria
IFAC Workshop (3rd) Artificial Intelligence in Real Time Control	Sept. 23-25	Napa, CA USA	*	Prof.G.J. Suski, Lawrence Livermore Nat.Lab., 7000 East Ave, Livermore, CA-94550, USA
IFAC/ISHS Workshop Mathematical and Control Applications in Agriculture and Horticulture	Sept. 30 Oct. 3	Matsuyama Japan	Oct. 15 1990	Prof. H. Nonami, Dept. of Biomechanical Systems, Ehime University, Tarumi Matsuyama 790, Japan
IFAC/(ISHS) Workshop Algorithms and Architectures for Real-Time Control	Sept.	Bangor UK	*	Prof.D.I.Jones, School of Electronic Engg. Science, UCNW Dean Street, Bangor Gwynedd LL57 1UT, UK
IFAC Symposium Advanced Control of Chemical Processes - ADCHEM '91	Oct. 14-16	Toulouse France	Oct. 1 1991	Prof. K. Najim, ENSIGC, Chemin Chemin de la Loge F-31078 Toulouse Cedex, France
IFAC Workshop AI, Control and Advanced Technology in Marine Automation	April 8-10	Genoa Italy	*	Prof.E.Volta, Ist. Automazione Navale C.N.R., Viale Causa 18R I-16145 Genoa, Italy
IFAC Symposium On-Line Fault Detection and Supervision in the Chemical Process Industries	April 22-24	Newark Delaware USA	*	Dr.P.Dhurjati, Dept. of Chem. Engg., Univ. of Delaware Newark, DE 19711, USA
IFAC Symposium (7th) Information Control Problems in Manufacturing Technology	May 25-28	Toronto Canada	Aug.31 1991	Dr.J.Scrimgeour, Advanced Manufacturing Technologies& Ind.Automation, Div.of EE National Research Council Ottawa,Ont. K1A 0R8, Canada
IFAC/(IFORS) Workshop Support Systems for Decision and Negotiation Processes	June 24-26	Warsaw Poland	Sept 1991	R. Kulikowski, System Res.Inst. Newelska 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'Herès, France
IFAC/IFORS/(IFIP)/(IIASA) Symp. (7th) Modelling and Control of National Economies	August 18-20	Beijing China, P.R.	*	Prof. Jong-Ming Wu, Dept. of Computer Science and Techn. Beijing Information Technology Institute, Beijing, China, P.R.
IFAC/IFORS Symposium (6th) Large Scale Systems: Theory and Applications	August 22-26	Beijing China, P.R.	*	Prof. Bao Liu, Inst. of Systems Engineering, College of Engg. Tianjin University, Tianjin China, P.R.
IFAC Symposium (7th) Automation in Mining, Mineral and Metal Processing	August 26-28	Beijing China, P.R.	Aug.20 1991	Prof.Sheng Wei-Zhi IFAC MMM Secretariat POB 919 Beijing, China, P.R.
IFAC Workshop (2nd) System Structure and Control	Sept. 3 - 5	Prague CSFR	*	Dr.S.Kubik, Inst. of Inf.Theory and Automation, Pod vodarens- kou vezi 4, CS-1182 08 Prague
IFAC Symposium (3rd) Low Cost Automation	Sept.	Vienna Austria	*	Prof. P. Kopacek c/o OePWZ Rockgasse 6, A-1014 Vienna Austria

\* not yet known - deadline past