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Seventeen months from now, on August 24, 1981, IFAC President, Prof. Yoshikazu Sawaragi will open the 8th Triannual World Congress of the International Federation of Automatic Control at the Kyoto International Conference Hall.



1981
AUGUST 24 - 28
KYOTO, JAPAN

Seventeen months seems a long time ahead, but not for organisers of a world congress. Work in the Congress Secretariat, though far from showing any hectic is clearly aimed at "Full Speed Ahead". The information leaflets and call for papers have been sent to all IFAC member organisations in 40 countries all over the world, requests for more copies and more details are arriving every day. More than 200 registration cards, containing near to a hundred intentions to submit a paper have already been received, IFAC Technical Committees are planning for technical sessions, round table discussions, panel discussions, tutorial sessions and case study sessions.

The theme of the IFAC 8th World Congress, 1981, is "Control Science and Technology for the Progress of Society". Papers on any topic related to this theme will be considered and the International Program Committee will attempt to organise sessions on these topics, if an adequate number of appropriate papers are received and accepted.

CONGRESS '81

PREPARATIONS GAINING MOMENTUM

Draft papers (not more than 4000 words and 10 figures) and abstracts (approximately 100 words) should reach the IFAC/81 Secretariat by September 20, 1980.

Manuscripts must be complete enough to describe the essentials of work done or actually in progress. Material may be added, within page limits, in the version later submitted for Congress preprinting. However any significant material which is expected to be added later should be noted in the original submittal.

Authors will be notified of the acceptance of their paper by the International Program Committee about February 10, 1981. Authors of the accepted papers will receive detailed instructions regarding the preparation of the final manuscripts. The date of submission of the final manuscripts will be April, 10, 1981.

Unlike previous congresses, papers are not being submitted to the respective National Member Organisation of the author's country but should be mailed directly to:

IFAC/81 Secretariat
Kinki Hatsumei Center
14 Kawahara-cho, Yoshida
Sakyo-ku, Kyoto 606, Japan
Telex: 5423191 IFAC K J
Cable: IFAC KYOTO

Copies of the call for papers and further details on Congress Registration can be obtained from the above address or from

IFAC Secretariat
Schlossplatz 12
A 2361 Laxenburg
Austria.

Everyone in the field of control is invited to join the congress and share the experiences of this significant event.

NEXT IFAC EVENTS

IFAC/DECOM Workshop on Appropriate Applications of Automatic Control in the Oil Industry and Desalination (Tripoli, Libya, May 12 – 15, 1980).

Sponsored by:

El Fateh University, Tripoli, Faculty of Engineering, Mechanical and Industrial Department.

Cosponsored by:

IFAC Committee on Developing Countries.

Purpose:

The aim of the workshop is to present the problems encountering the applications of control requirements in various branches of the industrial sector of developing countries.

Language:

English, no simultaneous translation available.

All correspondence should be addressed to

Dr. Hassan El Hares
Engineering Faculty
Tripoli P.O. Box 13235
Libya

IFAC Symposium on Pneumatic and Hydraulic Components and Instruments in Automatic Control (Warsaw, Poland, May 20 – 23, 1980)

Organised by:

Polski Komitet Pomiarow i Automatyki.

Topics:

Trends in pneumatic and hydraulic components design, electropneumatic and electrohydraulic components, actuators in control systems and mathematical modelling of instruments.

Language:

English, no simultaneous translation available.

Further details may be obtained from:

Polski Komitet Pomiarow i Automatyki
Naczelna Organizacja Techniczna w Polsce
ul. Czackiego 3/5
00-043 Warszawa, Poland

IFAC Symposium on Water and Related Land Resource Systems (Case Western Reserve University, Cleveland, Ohio, USA, May 28 – 31, 1980)

Sponsored by:

IFAC Committee on Systems Engineering.

Organised by:

American Geophysical Union.

Purpose:

Water and related land resource issues and problems are becoming a subject of interest and concern to natural, behavioral and social scientists and engineers, as well as to public officials and private citizens. This interest and concern stems from the growing recognition that the quality of water and related land resources is strongly intertwined with the standard of living, en-

vironmental quality, quality of life, energy, urban development, production of food and fiber, etc.

This Symposium addresses these issues and provides an international forum for a broad interdisciplinary exchange of views and experiences among scientists, engineers, planners, and public officials, including those from the industrial and agricultural sectors.

All correspondence should be addressed to:

IFAC-Water Systems 1980
c/o AGU Meetings
American Geophysical Union
1909 K Street, N.W.
Washington, D.C. 20006

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NEXT EC- AND RELATED MEETINGS

will take place in Cleveland, Ohio, June 1–5, 1980, i.e. immediately after the IFAC Symposium on Water and Related Land Resource Systems.

All Chairmen and Vice-Chairmen of IFAC Technical Committees are entitled and will be invited to attend.

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IFAC/IFIP Symposium on Automation for Safety in Shipping and Offshore Petroleum Operations (Trondheim, Norway, June 16 – 18, 1980)

Organised by:

Norwegian Society for Automatic Control (NFA).

This Symposium is a successor to five previously held Symposia on automation of maritime operations. Among the main topics are

- Instrumentation
- Control Systems
- Monitoring and Alarm Systems
- Navigation and Traffic Surveillance
- Risk Safety and Reliability
- Man – Machine Systems
- Simulator for Training
- Maintenance Systems.

Language:

English.

Publication:

Preprints will be available in advance of the Symposium and will be mailed on request.

All correspondence should be in English, and addressed to:

Arthur B. Aune
ASSOPO '80
SINTEF, Automatic Control Division
N-7034 Trondheim-NTH, Norway

IFAC Workshop on Control Technology for Developing Countries (Cairo Egypt, September 6 – 8, 1980)

Sponsored by:

IFAC Technical Committee on Developing Countries (DECOM)

Organised by:

The Egyptian High Committee of Automatic Control.

Scope:

The Workshop will include case studies on industrial applications and education. Such case studies presented from developing countries should be already applied ones, moreover, each should represent concrete experience worth reporting. Others from developed countries should prove its possible applicability in developing countries. The presented papers should cover the appropriate social effects.

Language:

English.

Further details can be obtained from

The Egyptian High Committee of Automatic Control
6 Khalil Agha Street, Garden City
Cairo, Egypt

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IMEKO/IFAC Symposium: Application of Microprocessors in Devices for Instrumentation and Automatic Control (London, UK, November 17 – 20, 1980)

Sponsored by:

International Measurement Federation (IMEKO) and IFAC Technical Committee on Components and Instruments

Organised by:

The Institute of Measurement and Control, London, on behalf of the United Kingdom Automatic Control Council (UKAC)

Topics:

The application of microprocessors

- to the processing of data obtained from primary measurements.
- in novel intelligent instruments.
- in devices for the communication of data.
- in devices for sequential and continuous control.
- to the improvement of actuator performance.
- in robots and automatic handling devices.

Language:

English.

All inquiries and correspondence should be sent to:

IMEKO/IFAC Symposium Organising Committee
The Institute of Measurement and Control
20 Peel Street, London W8 7PD, UK

SYSTEMS ENGINEERING FOR POWER

REPORT ON A US/EUROPEAN WORKSHOP IN SWITZERLAND

During the week 30 September through 5 October 1979, an Engineering Foundation Conference held in Davos, Switzerland reviewed the results of the first two completed phases of the U.S. Department of Energy program on Systems Engineering for Power. This program, initiated late in 1974, seeks to bring to bear, upon emergent and long-range problems in the field of electric energy systems, the insights and research capabilities of modern systems theory and engineering.

The first two phases of the program addressed problems in the control of large interconnected power systems under emergency conditions and prescriptive problems in the structuring of complex large-scale systems. Four research teams were involved in the Emergency Operating State Control effort, and eight teams in the Organisational Forms for Large-Scale Systems effort.

Significant results were reported in both areas. In the first, Washington University reported on the development of a new "observation decoupled" state space for real-time tracking and analysis of power system conditions and for use in formulating control targets. Systems Control, Inc., reported on the development of a Lyapunov-related transient energy stability analysis technique which overcomes most of the difficulties previously encountered in attempting such applications on power systems, providing rapidly results of accuracy adequate for many applications. Additionally, Wayne State University reported on the development of closed-loop optimal aim strategies for locally applied stability enhancement controls, and the MIT Electric Power Systems Laboratory reported on the assembly of a comprehensive coordinated group of algorithms for the control of slow speed dynamics following the initial impact of a system emergency.

In the second area, significant advances in the development and application of asymptotic methods were described by the University of Illinois and the MIT Laboratory for Information and Decision Systems. Of particular interest were the analyses, utilising asymptotic methods and team theory (particular leader-follower strategies), of multi-model situations where independent controllers of large-scale systems have only their own parochial approximate model of the common overall system. Systems Control, Inc., described the development of a spatial dynamic programming technique providing advantages for the study of optimal power flow and other large-scale network optimisation problems. The University of Michigan reported a formal characterisation of concepts of relative dependence to serve as a basis for efficient system decomposition, and Drexel University reported on the application of Hamiltonian analysis and averaging techniques to canonical reduced-order modeling of large-scale systems. Additionally, Systems Control, Inc., and Boeing Computer Services, Inc., discussed the development and utilisation of "descriptor variable" (implicit) techniques for the modeling and analysis of large-scale systems. SRI International reported on advances in game-theoretic based normative theory for the

structuring of objective functions, and Lawrence Livermore Laboratories reported on contributions toward and axiomatic theory of mathematical modeling.

The conference was attended by sixty-nine investigators representing eighteen countries of four continents.

A limited number of Proceedings in three volumes and an appendix are available from Dr. T.A. Trygar, U.S. Department of Energy, Washington D.C., 20585, or may be purchased from the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, 22161 (CONF-790904-P1, P2, P3).

BOOK REVIEWS



Singh, M.G. (ed.); Titli, A. (ed.): **Systems: Decomposition, Optimisation and Control.** A handbook on the practical optimisation and control of small and large scale systems. Pergamon Press. 645 p. £ 10.00 (1978).

This book comprises a collection of topics in large scale mathematical programming, deterministic control theory, and stochastic optimal control. The most distinctive feature of the book is the inclusion of numerous examples from diverse areas of engineering including water quality control, traffic networks, stock management, and electric and hydroelectric power systems. At the present time the only comparable book is by W. Findeisen („Hierarchische Steuerungssysteme", 1977) and another by M.G. Singh („Dynamical Hierarchical Control", 1977).

W.A. Gruver
in Zentralblatt für Mathematik

2nd IFAC Symposium on Control in Power Electronics and Electrical Drives Düsseldorf. 1977. Edited by W. Leonhard. Elmsford, NY, Pergamon, 1978. 1026 p. \$ 130.

This volume is a publication of the proceedings of this international symposium which covered the state-of-the-art of the field of static electronic power conversion, the second of such a meeting of minds within the last three years. A special inclusion at this particular symposium was the discussion of the effects of converter control on electrical machine design.

Contents: Control systems employing electronic power converters; converter circuits control procedures. Behaviour of inverter-fed electrical machines and requirements imposed by converter operation. Converter fed AC and DC-drives. Application of controlled industrial drives. Solid state energy conversion (HVDC, inductive heating, reactive power compensation, miscellaneous).

VISITORS TO IFAC



On February 9 and 10, 1980, President Sawaragi and other IFAC officers visited the Secretariat for an informal meeting on topical issues. They were invited by the Mayor to enter their names into the Golden Book of Laxenburg.

**THE GIORGIO QUAZZA
AWARD-NOMINATIONS
INVITED**



Prof. Dr. Tibor VÁMOS
First Vice President 1978-81

PAPERS

- Human Dynamics in Man-Machine Systems (D. McRuer)
- Fuzzy Controls for Maintenance Scheduling in Transportation Systems (M.M. Etschmaier)
- Turbine Generator Systems (H.G. Kwatny) Control for a HTGR Power Plant (K.C. Kalnitsky)
- An Instrumental Variable Method for Model Order Identification (P. Young, A. Jakeman R. McMurtrie)
- State Inverse and Decorrelated State Stochastic Approximation (R. Kumar, J.B. Moore)

IFAC REPORTS

- IFAC/IFORS Symposium on "Comparison of Automatic Control and Operational Research Techniques Applied to Large Systems Analysis and Control" (Symposium Committee)
- IFAC Symposium on "Computer Aided Design of Control Systems" (M. Mansour, W. Schaufelberger)

BRIEF PAPERS

- A Robust Sampled Regulator for Stable Systems with Monotone Step Responses (K.J. Aström)
- Adaptive Input Matching Control of Structurally Varying Plants (C.R. Johnson, E. Tse)
- A Model Reduction Technique for Nonlinear Systems (A.A. Desrochers, G.N. Saridis)
- On Decentrally Stabilisable Large-Scale Systems (M. Ikeda, D.D. Siljak)
- Design of Pole-Placement Compensators for Multivariable Systems (H. Seraji)

Professor Giorgio Quazza, a leading Italian electrical and control engineer who served IFAC in many capacities in a most distinguished manner, was an elected member of the Executive Council of IFAC when his untimely death occurred in an alpine accident in August 1978. As a memorial to him, the Giorgio Quazza Medal together with a prize will be presented at each IFAC Triannual International Congress to a distinguished control engineer.

The Medal will be awarded by the Executive Council of IFAC on the recommendation of a selection committee and presented at each Congress by the President of IFAC.

All IFAC National Member Organisations (NMO's) as well as all IFAC Technical Committees (TC's) are invited to put forward the name of one person irrespective of her or his nationality whose work on behalf of IFAC and the Automatic Control Community would in their opinion make them a suitable recipient of the award.

Nominations should be directed to the IFAC Secretary, who will forward them to the Selection Committee. Each such nomination shall be accompanied by a suitable citation setting out the reasons for the award together with a curriculum vitae and a list of publications. These are to reach the IFAC Secretariat not later than May 24, 1980 (i.e. 15 months before the start of the 8th World Congress in Kyoto).

Any candidate recommended for the Award shall have served IFAC in some capacity whether formally or informally and his work in a technical field covered by IFAC shall have been internationally recognized.

Tibor Vámos was born in Budapest, Hungary, in 1926. He graduated from the Budapest Polytechnical University as electrical engineer in 1950. He became a candidate of technical sciences in 1958 and a doctor of technical sciences in 1964. In 1973 he was made a corresponding member of the Hungarian Academy of Sciences and an ordinary member in 1979.

Engaged in power plant development and construction from 1950-54, his early research works in power plant automation were followed by the investigation of power system control problems. These achievements were published at the 1st and 2nd Congress of the International Federation of Automatic Control (IFAC) in 1960 and 1963 respectively.

Prof. Vámos is the founder and director of the Computer and Automation Institute of the Hungarian Academy of Sciences.

Later on, his interest shifted to more general problems of process control - his book "Control of Large Industrial Processes" was published in 1970. From the early seventies, Prof. Vámos has been leading a project on visual robot systems. The results were reported at several meetings, among others, the 6th and 7th World Congress of IFAC (Boston and Helsinki 1975 and 1978). His list of publications comprises well over 70 titles up to now.

He is currently a professor at the Polytechnical University of Budapest. He is a senior member of the IEEE and president of the John von Neumann Society for Computing Sciences.

Prof. Vámos has been active in IFAC since 1959; he became an AC member in 1966, an EC member in 1972. He was elected 2nd Vice-President in 1975 and 1st Vice-President in 1978.

Mail to:
IFAC Secretariat, Schloßplatz 12, A-2361 Laxenburg, Austria

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