



# IFAC

# INFORMATION BULLETIN

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**International Federation  
of Automatic Control**

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### IFAC Symposia 1973 approved by the Executive Council of IFAC

Subject	Date	Place	Contact Address
Programming Languages for Numerically Controlled Machine Tools - PROLAMAT (2nd IFIP/IFAC Conf.)	April 10-13	Budapest, Hungary	PROLAMAT'73, Budapest 112, P.O.B. 63, Hungary ✓
Systems Approaches to Developing Countries (IFAC/IFORS Conf.)	May	Algiers, Algeria	Dir. Y. Mentalechta, Commissariat à l'Informatique, 4 bvd. Mohamed V, Algiers, Algeria ✓
Automatic Control in Space (5th IFAC Symp.)	June 5-9	Genoa, Italy	Prof. U. Pellegrini, ANIPLA, Sez. di Milano, 1 Piazza Belgioioso, 20121 Milano, Italy
Identification and System Parameter Estimation (3rd IFAC Symp.)	June 12-15	The Hague, Netherlands	IFAC 1973 c/o Klvl, 23 Prinsessegracht, The Hague, Netherlands ✓
Sensitivity, Adaptivity and Optimality (3rd IFAC Symp.)	June 18-21	Ischia, Italy	Prof. S. Rinaldi, Istituto di Elettrotecnica ed Elettronica, Politecnico di Milano, 32 Piazza L. da Vinci, 20133 Milano, Italy ✓
Ship-Operation-Automation (IFAC/IFIP Symp.)	June	Oslo, Norway	H.-P. Klemmetsen, M.Sc., Norsk Forening for Automatisering, Postboks 279, Oslo 3, Norway
Dynamic Modelling and Control of National Economies (IFAC/IFORS Conf.)	July 9-12	Coventry, England	Dr. P.C. Parks, Control Theory Centre, University of Warwick, Coventry CV4 7AL, England ✓
Automatic Control in the Glass Industry	August 5-10	Lafayette, Ind., USA	The Organizing Committee, Symp. on Autom. Control in the Glass Industry, Purdue Lab. for Applied Industrial Control, Purdue Univ., Lafayette, Ind. 47907, USA
Dynamics and Control in Physiological Systems	August 22-24	Rochester, N.Y., USA	Prof. G. H. Cohen, Dept. of Electrical Engineering, University of Rochester, Rochester, N.Y. 14627, USA
Automatic Control in Mining, Mineral and Metal Processing	August 20-24	Sydney, Australia	The Institution of Engineers Australia, Science House, Gloucester and Essex Streets, Sydney, N.S.W., Australia ✓
Control of Water: Resources, Storage, Distribution, Utilization, Pollution and Desalinization	September	Haifa, Israel	The Israel Committee for Automatic Control, Faculty of Electrical Engineering, Technion City, Haifa, Israel ✓

Relevant announcements and calls for papers either have been published (in IFAC Bull. Nos. 67 and 68) or will be published in due time.

The list is likely to be extended by two more IFAC sponsored symposia subject to final approval by the Executive Council of IFAC. Furthermore, an IFIP/IFAC Conference on Shipyard Automation is contemplated for 1973.

## PROLAMAT'73 Conference

In pursuance of the aims of the First International Conference on Programming Languages for Numerically Controlled Machine Tools (PROLAMAT) held in Rome, 1969, it has been decided to repeat this event periodically. The Second PROLAMAT Conference sponsored jointly by the International Federation for Information Processing (IFIP) and the International Federation of Automatic Control (IFAC) will be held in Budapest, Hungary, from April 10 to 13, 1973. PROLAMAT'73 will deal with programming languages for

- Machine tools
- Integrated discrete manufacturing systems
- Planning and scheduling of automated manufacturing
- CAD and interactive graphics in the design and use of machine tools

and papers are invited on all of the soft-ware topics listed. Preference will be given to papers on new achievements that have been tested in practical use.

Abstracts in duplicate (20-30 lines, in English) should reach the Secretariat for pre-selection by March 1st, 1972 at the following address:

PROLAMAT'73  
Budapest 112, P.O.Box 63  
Hungary.

The deadline for the final selection on the basis of complete papers is October 1st, 1972.

Interested authors and interested attendees should write to the above address for any further information.

## 5th IFAC Space Symposium

The series of successful IFAC Symposia on Automatic Control in Space, with the fourth one held only recently in Dubrovnik, Yugoslavia (Sept. 6 to 10, 1971), will be continued in Genoa, Italy, June 5 to 9, 1973. The organization is in the hands of the Associazione Nazionale Italiana per l'Automazione (ANIPLA) and the Istituto Internazionale delle Comunicazioni.

The Symposium will lay particular emphasis on the theory and the technology of automatic control of dynamic systems evolving in relation to some physical base.

Papers are invited in the following fields:

- Outer-space base systems
  - Large space systems
  - Space-shuttles and space-tugs
  - Reusable vehicles
  - Control of launchers and boosters
  - Control of space-vehicles and orbits (including rendezvous, docking, reentering and soft-landing)
  - Orbiting laboratories
  - Lunar and planetary missions

- Conventional base systems
  - Guidance and automatic control of supersonic aircrafts
  - Short term problems for guidance of supersonic aircraft with other traffic
  - Flight-instruments for guidance and information processing on board
  - Optimisation of missions (including simulation)
  - New specifications for long term guidance
  - Stability, maneuverability and navigation of big tankers and hydrofoils
  - Optimal ships routes and automatic navigation
- Unusual base systems
  - Problems of locomotion and manipulation (in underwater and underground systems, in outer space and on planetary surfaces)
  - Man-machine interactions
  - Problems in biomechanics, modelling of human behaviour, unusual base control of living systems
  - Automatic control in underwater and in underground exploration
- New problems in automatic control
  - Automatic control in earth and in planetary exploration
  - Operation satellites in the management of human environment
  - Problems in ecology and environmental control
  - Transfer of space technology achievements to other fields of practical use
  - Application of system analysis methods to the consideration of space control problems

Abstracts are requested by May 1, 1972. The deadline for full papers is December 10, 1972. Potential authors should write to one of the addresses given below:

- Authors from USA: *Dr. Ing. W. Haeussermann*  
NASA  
Marshall Space Flight Center  
Huntsville, Alabama, USA
- Authors from USSR: *Acad. Prof. A. M. Letov*  
Control Problems of the  
USSR Academy of Science  
Profsojuznaja 81  
Moscow GSP-312, USSR
- Authors from other countries: *Prof. U. Pellegrini*  
A.N.I.P.L.A.  
Sezione di Milano  
Piazza Belgioioso 1  
I-20121 Milano, Italy.

Interested attendees should direct any inquiries to Prof. U. Pellegrini.

## Dynamic Modelling and Control of National Economies

Sponsored by the Technical Committees on Systems Engineering and on Theory of the International Federation of Automatic Control (IFAC) and co-sponsored by

the International Federation of Operational Research Societies (IFORS) a conference will be held on Dynamic Modelling and Control of National Economies at the University of Warwick, Coventry, England, July 9 to 12, 1973. The meeting is organized by the Control Theory Centre and School of Economics of the University of Warwick in association with the United Kingdom Automation Council.

The Conference will cover the application of systems engineering and control theory to the dynamic analysis and control of macro-economic models. Primary topics include prediction, planning, and parameter estimation for national economies and social systems, with emphasis on the concepts of dynamics, control, and system identification. Secondary topics include analyses of partial models for economic sectors such as consumption and investment subsystems, and studies of the interactions of technological, economic, and social forces.

Authors are invited to submit 500 word abstracts not later than 1 June 1972. From these a selection will be made and complete papers will be requested for submission not later than 1 November 1972.

All inquiries and communications should be addressed to the Secretary of the Symposium Organizing Committee

*Dr. P. C. Parks*  
Control Theory Centre  
University of Warwick  
Coventry CV4 7AL, England.

## Dynamics and Control in Physiological Systems

This IFAC Symposium sponsored in conjunction with the American Society of Mechanical Engineers (ASME), the American Physiological Society (APS) and the International Union of Physiological Sciences (IUPS) will be held at the University of Rochester, Rochester, N.Y., USA, from August 22 to 24, 1973, prior to the annual 1973 APS Meeting at McGill University, Montreal, Canada.

It is the objective of the symposium to encourage important summaries of the major physiological control systems in complex living systems by joint efforts of physiologists and engineers and, in particular, to encourage joint, crossed disciplinary efforts from different institutions.

Interested authors may write to either of the two program chairmen (addresses see below) indicating, by brief outline, specific interest, proposed partnership for the paper, or partnership desired. The program chairmen will try to match their interest with a potential co-author from the other discipline. Interactions, not marriages, are guaranteed. Results desired ultimately are joint papers that agree, or disagree, but at least illuminate the problem areas by their differing points of view. About one third of the papers will be invited overviews.

Suggested topic areas are:

- Biochemical control at the membrane level
- Dynamic modes of drug action
- Organ regulation and control (heart, kidney, liver, muscles, brain, spleen, G.I., gonads, respiratory systems, sensory receptors)
- Overall systems response (metabolism, thermoregulation, nutrition, water regulation, growth regulation, electrolyte regulation, behavioral regulation, nervous control)
- Homeostatic regulation.

Interested authors should address one or the other program chairman:

*A. Iberall*  
General Technical Services, Inc. School of Medicine  
8794 West Chester Pike Univ. of California, Davis  
Upper Darby, Pennsylvania, Davis, California, U.S.A.  
U.S.A.

Interested attendees should contact the general chairman:

*Professor G. H. Cohen*  
Department of Electrical Engineering  
University of Rochester  
Rochester, New York 14627, U.S.A.

## New Publications

**AUTOMATIC CONTROL AND COMPUTERS IN THE MEDICAL FIELD** - At the IFAC Symposium held on that subject in Brussels, September 27 to October 1, 1971, 55 technical papers were presented in sessions on topics such as the teaching of statistics in medicine; multidisciplinary approach of the techniques of automatics and applied informatics covering the acquisition of the information, the models, and the dealing with the information; the medical file; the maximumizing of the work of the doctor.

The preprint volume (381 pages, illustrated, soft cover) is available at 1000.- Belgian Francs. Orders should be directed to the Institut Belge de Régulation et d'Automatisme (IBRA), 3, rue Ravenstein, Brussels, Belgium. Payment should be made either by postal order (Office des Cheques Postaux, Brussels, for account No. 662.93 of the Institut Belge de Régulation et d'Automatisme, Brussels), or else by remitting the sum to the Société Générale de Banque, Brussels, for IBRA's account No. 64.026.

Proceedings of the 2nd IFAC Symposium on **MULTI-VARIABLE TECHNICAL CONTROL SYSTEMS** - Four volumes, three of which containing the technical papers and the fourth the survey papers presented at the Symposium which was held in Düsseldorf, October 11 - 13, 1971. The conference provided a forum at which the latest developments in multivariable control theory and its applications were discussed. The essential criterion for selection of the technical papers was that they should give a relevant application of the theory.

Vol. 1 (336 pages) on Linear Multivariable Systems Theory is subdivided into chapters on State Feedback, Controllability (6 papers), Mathematical Systems Realization (3 papers), Transfer Function Representation (5 papers), Parameter Sensitivity and Accuracy (4 papers), and Time-Discrete Systems (4 papers).

Vol. 2 (428 pages) on Optimal Multivariable Control Systems Theory is subdivided into chapters on Model-Following Systems (3 papers), Linear Systems (11 papers), Nonlinear Systems (4 papers), Various Problems (4 papers), Multilevel Technical Systems Theory (3 papers), and Various Theoretical Problems (5 papers).

Vol. 3 (344 pages) deals with two topics, namely with Applications in Process Industries (7 papers in chemical process industries and 5 papers in others) and with Applications in Power Plants and in Power Distribution Systems (4 papers in power plants and 6 papers about boilers and other problems).

Vol. 4 (212 pages) which is also available separately (at Dfl. 40.00, appx. US \$ 11.75), contains the following survey papers: Linear multivariable feedback theory: a survey (*A.G.J. McFarlane*); Optimal multivariable control systems theory: a survey (*M. Thoma*); Multilevel technical systems theory (*M. D. Mesarovic*); Multivariable systems in process control (*J.E. Rijnsdorp*); Multivariable technical control systems. Survey of applications in power plants and power distribution systems (*J.P. Waha*).

The editor of the proceedings is *H. Schwarz*, Technical University Hannover, FRG, and the publisher is North Holland Publishing Company, Amsterdam. The four volumes with 1320 pages altogether have a hard-bound cover and are illustrated. The price for the four volumes is Dfl. 200.00 (appx. US \$ 58.75) and orders should be sent either to a bookseller or to Elsevier/North-Holland Book Division, P.O.Box 3489, Amsterdam, The Netherlands.

BIOMEDICAL SCIENCES INSTRUMENTATION - Vol. 8, presents 15 papers on research and applications of engineering technology in the medical and life sciences. The book comprises proceedings of the Ninth International ISA Biomedical Sciences Instrumentation Symposium (Aug. 30 - Sept. 1, 1971, Milwaukee, Wisconsin, USA).

The main research themes in the book are physiological monitoring and remote sensing. Contributions on the biomedical applications of pressure transducers, and

active electrodes with monolithic amplifiers are given. Also covered are gas chromatography, computer and display devices, and medical electrical safety.

Edited by *A. Khalafalla* and *M.D. Weiss*. 91 pages, illustrated, soft cover. Price: US \$ 9.00. Published by Instrument Society of America (ISA). Orders should be addressed to: Instrument Society of America (ISA), 400 Stanwix Street, Pittsburgh, Pa. 15222 / USA; or (for purchasers in Europe) to: Pertel Ltd., Cursitor Str., Chancery Lane, London E.C. 4 / U.K.; or (for purchasers in Japan) to: Taisay Koheki Comp. Ltd., Higashinakano 1-46-19, Nakano-ku, Tokyo / Japan.

PROCEEDINGS of U.S.A. JOINT AUTOMATIC CONTROL CONFERENCES - Copies of the bound preprint volumes from 1960 onwards of the annual U.S.A. Joint Automatic Control Conferences (JACC) are obtainable from the Member Societies of the American Automatic Control Council (AACC) as follows:

- American Institute of Aeronautics & Astronautics (AIAA), 1290 Sixth Avenue, New York, N.Y. 10019; Univ. of Washington (Seattle), 1966; Stanford Univ., 1972.
- American Institute of Chemical Engineers (AIChE), 345 East 47th Street, New York, N.Y. 10017; Univ. of Minnesota, 1963; Univ. of Colorado (Boulder), 1969; Univ. of Texas (Austin), 1974.
- American Society of Mechanical Engineers (ASME), 345 East 47th Street, New York, N.Y. 10017; MIT, 1960; Rensselaer Inst. of Techn., 1965; Georgia Inst. of Techn., 1970; Purdue Univ., 1976.
- Institute of Electrical & Electronics Engineers (IEEE), 345 East 47th Street, New York City, N.Y. 10017; New York Univ., 1962; Stanford Univ., 1964; Univ. of Michigan, 1968; Washington Univ. (St. Louis), 1971; Ohio State Univ. (Columbus), 1973.
- Instrument Society of America (ISA), 400 Stanwix Street, Pittsburgh, Pa. 15222; Univ. of Colorado (Boulder), 1961; Univ. of Pennsylvania, 1967.

Please direct all purchase orders to the Order Department of the indicated Society (not to AACC).

In all cases, the publications are preprint volumes; most of the JACC papers are later re-published in the Transactions and Journals of the different AACC Member Societies. Some of the earlier preprint volumes may be out of print.