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International Federation of Automatic Control

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Newsletter

Contents:

Budapest: Getting Ready for IFAC

Forthcoming Events

International Stability
as a Systems Problem

New Publications

Who is Who in IFAC

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Offenlegung:
Das Medienwerk „IFAC Newsletter“ wird als Organ der „International Federation of Automatic Control (IFAC)“ verlegt und ist Eigentum dieser internationalen Föderation, deren Tätigkeit der Förderung von Wissenschaft und Technik automatischer Regelung und Steuerung dient. Die Föderation hat ihren Sitz in Genf und ist nach Schweizer Recht als gemeinnütziger Verein angemeldet. Sie verfolgt weder wirtschaftliche noch praktische Ziele. Das Sekretariat der IFAC befindet sich seit 1978 aufgrund eines Übereinkommens mit der Österreichischen Bundesregierung und der Österreichischen Akademie der Wissenschaften in Laxenburg. Der „IFAC Newsletter“ erscheint sechsmal jährlich in englischer Sprache unter der Redaktion des Generalsekretärs der IFAC, Prof. Dipl.-Ing. Fred Margulies. Die Zeitschrift dient der Information über die Aktivitäten der IFAC. Sie wird kostenlos an Abonnenten in 48 Ländern versandt, die Kosten werden von der IFAC aus den Beiträgen der derzeit 43 Mitgliedsländer getragen. Präsident der IFAC ist für 1981/84 Akademienmitglied Prof. Dr. T. Vámos (Ungarn), Vizepräsidenten sind Prof. Dr. M. Thoma (BRD), Akademienmitglied Prof. Dr. B. Tamm (UdSSR) und Mr. W. E. Miller (USA). Die komplette Liste der Vorstandsmitglieder wurde im Newsletter Nr. 5 (Oktober 1981), ein Auszug aus den Statuten in Newsletter Nr. 6 (Dezember 1981) veröffentlicht. Alle Funktionen werden ehrenamtlich ausgeübt.

(To our readers: To comply with the new Austrian "Media Act" every publication must contain once a year a declaration concerning ownership and purpose as above.)

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Budapest:

Getting Ready for IFAC '84

Budapest, the capital of Hungary, has been chosen as venue for the 9th World Congress of IFAC, scheduled for July 2—6, 1984.

Thus IFAC will go to Europe again after the memorable and successful Congress in Kyoto. The experiences of the Japanese friends will no doubt guide and inspire the Hungarian organizers. Four brand new hotels on both banks of the river Danube — two of them completed, two still under construction — have been selected, we were told, to accommodate participants and Congress meetings. Their technical as well as their catering facilities will be at the disposal of the Congress. Rooms in moderately priced student dormitories will also be made available.

In accordance with the traditions of IFAC, the Congress will cover the broad spectrum of the science and technology of automatic control in all systems, including engineering, physical, biological, social or economic ones, as represented by the 14 Technical Committees of the Federation:

- Applications
- Biomedical Engineering
- Components and Instruments
- Computers
- Developing Countries
- Economic and Management Systems
- Education
- Manufacturing Technology
- Mathematics of Control
- Social Effects of Automation
- Space
- Systems Engineering
- Terminology and Standards
- Theory.

The Congress will feature plenary lectures, technical sessions, case studies and panel discussions. It is planned that the Congress be structured as a combination of symposia and workshops on different well-defined subject areas within automatic control.

The International Program Committee will have its first meeting in September 1982. Technical committees and national member organizations are invited to start soliciting

contributions, to select topics of particular interest for the Congress symposia and workshops and to give the organizers the benefit of their ideas, suggestions and advice. Two years from now the program has to be completed.

All correspondence should be addressed to:

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Budapest
H-1502 Hungary.

9TH WORLD CONGRESS OF THE
INTERNATIONAL FEDERATION
OF AUTOMATIC CONTROL



BUDAPEST, HUNGARY, 25 — 29 JUNE, 1984

A BRIDGE BETWEEN CONTROL SCIENCES
AND TECHNOLOGY

FORTHCOMING EVENTS

| Title | Date 1982 | Place | Deadlines | Further Information |
|---|--------------------|----------------------------|--|---|
| IFAC Symposium on Control Aspects of Prosthetics and Orthotics | May 7—9 | Columbus, Ohio, USA | Papers: April 1 | Prof. Herman R. Weed Biomedical Engineering Center, Ohio State University, 2015 Neil Ave., Columbus, Ohio 43210 USA |
| Prolamat '82 5th International Conference on Programming Research and Operations Logistics in Advanced Manufacturing Technology | May 16—18 | Leningrad, USSR | — | USSR 199164 Leningrad, Mendeleyevscaya linia 1 Leningrad Research Computer Centre of the USSR Academy of Sciences PROLAMAT '82 Organizing Committee |
| 4th IFAC Workshop on Distributed Computer Control Systems | May 24—26 | Tallinn, USSR | Papers: April 19 | Prof. B. Tamm DCCS 82 Tallinn Technical University Ehitajate tee 5 Tallinn 200026, Estonia USSR |
| 6th IFAC Symposium on Identification and System Parameter Estimation | June 7—11 | Washington, D.C., USA | — | IFAC-82 Symposium c/o Department of Electrical Engineering Systems, University of Southern California, Los Angeles, Calif. 90007, USA |
| IFAC Workshop on Computer Aided Design of Projects and Development Policies | June 22—24 | Ankara, Turkey | Papers: March 31 | Dr. Önder Yüksel Electrical Engineering Department, Middle East Technical University Ankara, Turkey |
| IFAC Workshop on Application of Non-Linear Programming to Optimal Control Problems | June 22—25 | Rocquencourt, France | — | J. P. Yvon INRIA, Domaine de Voluceau — Rocquencourt, B. P. 105 F-78153 Le Chesnay Cedex, France |
| 3rd IFAC Symposium on Control of Distributed Parameter Systems | June 29— July 2 | Toulouse, France | — | L. Le Letty Symposium IFAC/CDPS CERT-DERA 2, ave. Edouard Belin BP 4025, F 31055 Toulouse, Cedex, France |
| IFAC/CISM Workshop on Singular Perturbations in Systems and Control | July 5—8 | Udine, Italy | not yet known | Dr. Marc Ardema N.A.S.A. Ames Research Center Moffet Field, Calif. 94305, USA |
| IFAC/ESA Symposium on Automatic Control in Space | July 5—9 | Noordwijkerhout, NL | Papers: February 1 | c/o K.I.V.I. Postbus 30424 2500 GK 'S Gravenhage, Netherlands |
| IFAC Workshop on Singular Perturbations and Robustness of Control Systems | July 13—16 | Lake Ohrid, Yugoslavia | not yet known | Prof. Petkovski Institut za mernu tehniku i upravljanje, Fruskogorska 11, 21000 Novi Sad, Yugoslavia |
| IFAC Workshop on Modeling and Control of Biotechnical Processes | August 17—19 | Helsinki, Finland | Abstracts: March 31 Papers: August 17 | Prof. J. Virkkunen Control Engineering Lab. Helsinki University of Technology SF 02150 Espoo 15 |
| IFAC Workshop on Management Control Systems — Modeling of Dynamics | September | Dubrovnik, Yugoslavia | not yet known | Prof. M. Rajkov Facultet Org. Nauka ul. Oslobodjenja Beograd, Yugoslavia |
| IFAC Symposium on Computer Aided Design of Multivariable Technological Systems | September 15—17 | W. Lafayette, Ind., USA | Papers: May 15 | Prof. G. Leininger Purdue University IFAC/CAD, School of Mechanical Engineering West Lafayette, Ind. 47907, USA |

FORTHCOMING EVENTS (ctd.)

| Title | Date 1982 | Place | Deadlines | Further Information |
|--|-----------------------|-----------------------------|---------------------|---|
| IFIP/IFAC Int. Symposium on Ship Operation Automation (ISSOA '82) | September 20—22 | Genoa, Italy | — | Istituto Internazionale delle Comunicazioni Via Pertinace — Villa Piaggio I-16125 Genoa, Italy |
| IFAC/IFIP/IFORS/IEA Conference on Analysis, Design and Evaluation of Man-Machine Systems | September 27—29 | Baden-Baden, FRG | Papers: March 31 | VDI/VDE Gesellschaft Meß- und Regelungstechnik (GMR), Postfach 1139, D-4000 Düsseldorf 1, FRG |
| ÖGI/IFAC Conference on Industrial Robots: Chances and Problems for our Enterprises | September 28—30, 1982 | Linz, Austria | Papers: May 31 | Prof. Dr. Arno Schulz Institut für Informatik Johannes Kepler Universität A-4040 Linz, Austria |
| 3rd IFAC/IFIP Symposium on Software for Computer Control (SOCOCO '82) | October 5—8 | Madrid, Spain | Papers: April 15 | SOCOCO '82 E.T.S. Ingenieros Industriales, Castellana 84, Madrid 6, Spain |
| IFAC Workshop on Safety of Computer Control (SAFECOMP '82) | October 11—14 | W. Lafayette, Ind., USA | not yet known | Mr. Roy W. Yunker PPG Industries Corp. One Gateway Center Pittsburgh, PA, 15222, USA |
| 4th IFAC/IFIP Symposium on Information Control Problems in Manufacturing Technology | October 26—28 | Gaithersburg, Maryland, USA | — | M. Auman, Secretary IVth IFAC/IFIP Symposium National Bureau of Standards Building 220, Room A 123 Washington DC 20234, USA |
| IFAC Symposium on Components and Instruments for Distributed Control Systems | December 9—11 | Paris, France | not yet known | Dr. Z. Binder Laboratoire d'Automatique de Grenoble — ENSIEG B. P. 46, F-38402 St. Martin- d'Hères, France |

International Stability as a Systems Problem

(Report on a Roundtable Discussion at the 1981 IFAC Kyoto Congress)

International stability is considered to refer to conditions in which nations in an interdependent fashion may interact with one another in ways which permit gradual changes with time in a mutually acceptable fashion. Ways and means will be established for arriving at mutually acceptable agreements and appropriate means will be instituted for seeing that such agreements are adhered to without resort to force. Economic and other peaceful competition will take place under conditions of international stability with the basis for competitive activity being agreed upon in advance. International instability would correspond to conditions in which large and rapid changes take place under conditions of major conflict or war in a military or political sense.

These were the basic assumptions brought forward by *Harold Chestnut* (former President of IFAC) when he introduced a round table discussion on the subject of "Supplemental Ways of Improving International Stability" (SWIIS) during the Kyoto Congress.

The session was attended by 29 persons, 9 of whom presented prepared statements on the subject.

They emphasized the inequality of living standards between nations (*M. Cuénod*), the

shortcomings in both technical and general education (*A. Alonso-Concheiro*), the role of information technology in facilitating freer and more balanced flow of persons, goods, and information (*R. Kalman*).

J. F. Coales referred to general stability theory in which having many smaller elements in a system rather than a few large elements was shown to improve system stability. Since it is inherent in national systems that there be a fair measure of uncertainty, it appears desirable that there be more frequent and less formal interactions between countries to avoid having a few major contacts one of which could lead to major international instability. Further study of this approach to understanding stability was recommended.

A warning that IFAC should avoid getting involved in political disputes of a rather topical character was issued by *F. Margulies*, who suggested specific IFAC activities which could contribute to international stability, making use of the experience in systems approach to important dynamic problems. This was illustrated by a description of the analytical and practical principles developed and used in evaluating water resource systems (*Y. Haimés*) and by experiences in global modeling as undertaken by the Club of Rome (*Y. Kaya*).

Y. Nishikawa spoke of the international interdependence of national political, technological, economic and industrial systems, suggesting lines for IFAC activities, while *K. Kaneshige* referred to an important part of the preamble of the Constitution of Japan which states, "We, the Japanese people, desire peace for all time and are deeply conscious of the high ideals controlling human relationship, and we have determined to preserve our security and existence, trusting in the justice and faith of the peace-loving peoples of the world".

A number of other points were developed during the general discussion. The roundtable further directed its efforts to future IFAC activities on the subject. Holding a Workshop in Laxenburg in 1983 and presenting 1-2 sessions at the 1984 Budapest Congress were considered to be worthwhile future activities for the next few years. Continuing efforts will be directed by the Working Group on SWIIS which has been set up as part of the IFAC Technical Committee of Systems Engineering (SECOM). It will be chaired by *H. Chestnut* with *R. Kalman*, secretary.

Persons interested in participating in this Working Group should notify *H. Chestnut* (USA), *R. Kalman* (Hungary), or *F. Margulies* (IFAC Secretariat).



Distillation Columns

an ISA Monograph

by A. Eli Nisenfeld and R. C. Seemann

Eli Nisenfeld, one of the active and devoted members of the IFAC family, at present chairman of the APCOM Working Group on Chemical and Petrochemical Industries, has held various IFAC offices for many years. On top of that he is a well known expert in the chemical industry of the US, director of process control engineering in one of the major chemical companies with distillation one of his specialities.

Eli's many friends will be pleased to learn about the new book he published together with Richard C. Seemann, whose main topic is process control technology. The book deals with Distillation Columns and is aimed at either the control engineer, who for the first time meets with the distillation process, or at the distillation specialist, who has suddenly been challenged to control the process. They will both benefit from this ISA monograph, as will the junior engineer, who will find there the general theory as well as practical concepts like process measurement of controlled variables in distillation systems, basic control requirements in distillation, advanced control systems, and digital techniques.

The book thus provides a complete picture of the theory behind the distillation process, as well as a practical understanding of how to control distillation.

A glossary defining the most important terms associated with the operation of a distillation column, a bibliography to find appropriate material for further studies, and an index containing the keywords of the subject make this publication a valuable part of any library.

(Instrument Society of America,
67 Alexander Drive
P. O. B. 12277
Research Triangle Park
North Carolina 27709, USA)

Multilingual Glossary of Automatic Control Technology

English - French - German - Russian - Italian
- Spanish - Japanese

Edited by D. T. Broadbent and M. Masubuchi,
International Federation of Automatic Control

Extensively revised and updated to include the Japanese language, this glossary contains detailed definitions of over 2000 terms in automatic control technology. For Control engineers and systems scientists.

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Publications available at the IFAC Secretariat:

Guidelines for Organizers of IFAC Sponsored Symposia and Conferences (and of IFAC Congresses)

Guidelines for Organizers of IFAC Sponsored Workshops

Advice to Organizers of IFAC Sponsored Symposia

Advice to IFAC Symposium Editors

Preparation of Slides — A Guide for Authors

Presentation of Scientific Papers — A Guide for Authors and Session Chairmen

Round Table Discussions — Suggestions for Chairmen

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.

Computerized Measurement Microcomputers in Measurement

From the 22nd of September to the 3rd of October, 1981 at the Inter-University Centre of Dubrovnik (Yugoslavia) the 3rd *International IMEKO Symposium on Computerized Measurement* and the 1st *International IMEKO Summer School on the Application of Microcomputers in Measurement* were organized by the International Measurement Confederation (IMEKO) in cooperation with the Yugoslav Association of Measurement, Control and Automation (JUREMA), Zagreb and the Inter-University Centre, Dubrovnik.

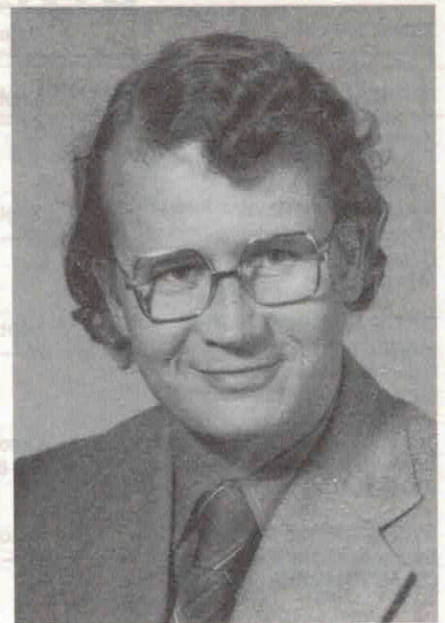
Outstanding plenary lectures presented by Prof. Hofmann, GDR, Prof. Soucek, Yugoslavia, Prof. Van Den Hende, The Netherlands, Prof. Pfeifer, FRG, Prof. Morishita, Japan and Prof. Owen, USA reviewed recent advances in measurement theory and its application to practice with emphasis on computerized measurement, in more than 60 session papers participants exchanged their ideas on recent experiences and further developments in measurement.

The publications of both events are available either from

JUREMA
P. O. B. 398
YU-41001 Zagreb

or from the

IMEKO Secretariat
P. O. B. 457
H-1371 Budapest



Prof. Stephen Kahne
Chairman IFAC Publications Committee

Stephen Kahne was born in New York City, April 5, 1937. He received the B.E.E. degree from Cornell University, and the M.S. and Ph.D. degrees from the University of Illinois, Urbana, the last in 1963.

He was at the University of Illinois from 1960 to 1963 as a Research Assistant, then Research Associate at the Coordinated Science Laboratory and Instructor in Electrical Engineering. From 1963 to 1965, he served in the Air Force at the Cambridge Research Laboratories, Bedford, Massachusetts. From 1966 to 1976 he was on the faculty of the Department of Electrical Engineering, University of Minnesota, Minneapolis. In 1976 he was appointed Professor and Chairman of the Department of Systems Engineering, Computer Engineering and Information Sciences, Case Western Reserve University, Cleveland, Ohio, but left Cleveland in 1980 for an assignment with the Science Research Council in Washington.

Dr. Kahne has held many positions in the IEEE Control Systems Society. He was Chairman of the Urban and Social Systems Committee from 1973 to 1974 and Associate Editor of the Transactions for Urban and Social Systems in 1973 and 1974. From 1975 to 1978 he was Editor of the Transactions on Automatic Control. Active in the IEEE at the Institute level, he was a member of the Publications Board from 1973 to 1975, Chairman of the Panel of Technical Editors in 1974, an IEEE Outstanding Lecturer from 1971 to 1974 and a member of the TAB Urban Task Force during its existence in 1973 and 1974. He is a Fellow of the IEEE.

In IFAC he was Chairman of the Education Committee, then became Honorary Editor of IFAC, and Associate Editor of the IFAC journal, AUTOMATICA, and is a member of its Editorial Board as well as the Managing Board of IFAC Publications. He is at present holding the office of Chairman of the IFAC Publications Committee, to which he was elected during the 8th World Congress of IFAC, held in Kyoto.