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The IFAC Homepage has moved to a different location. It can now be found under the following URL:

<http://www.ifac-control.org>

To all our readers



A Merry Christmas and a Happy New Year

Intelligent Components and Instruments for Control Applications – SICICA'97

IFAC Symposium (3rd)

AnneCy, France, June 9 – 11, 1997

SICICA'97 was the Third Symposium in the series (1992, Malaga, Spain; 1994, Budapest, Hungary). It was sponsored by the Technical Committee on Components and Instruments and was organized by the Laboratoire d'Automatique et de Microinformatique Industrielle, Université de Savoie, on behalf of AFCET, the French National Member Organization.

The symposium was held in the Imperial Palace Congress Center on the beautiful shores of the lake of AnneCy. Approximately 178 papers were submitted as draft papers and reviewed by the International Program Committee members who selected 117 papers coming from 25 countries. The main topics of the symposium were:

- Fieldbuses
- Automotive Applications
- Mobile Robots
- Design Tools
- Applications of Intelligent Sensors
- Advanced Control
- Neural Networks
- Vision
- Dedicated Architecture
- Robotics
- Data Fusion
- Gas Sensors
- Education
- Intelligent Control
- Fuzzy Control
- Fuzzy Modeling
- Design of Intelligent Components
- Estimation
- Manufacturing Applications
- Sensors

During these three days 196 participants had the opportunity to attend 29 sessions, including 3 invited

sessions and 3 plenaries which gave an overview of the main topics. Mike MASTEN from Texas Instruments, Dallas, Texas, presented the evolution of electronic components, especially microcontrollers and digital signal processors which can be used for the implementation of instruments where intelligence is located in the processing. Jean-Pierre THOMESSE from the Centre de Recherche en Informatique, Nancy, France, gave a wide panorama of problems and solutions when using fieldbuses for the control of automated processes. Finally, Marc DEGRAUWE from the Centre Suisse d'Electronique et de Microtechnique, Neuchatel, Switzerland, showed the principal phases in the industrialisation of microsystems which associate micromechanics and microelectronics.

An exhibition of industrial products in close relation with the topics of the symposium was presented by ALCATEL, ACMI/C4I, CSEM, SIGMA-PLUS, SNR Roulements, SOMFY, TEFAL, thus showing the industrial reality of the field. Many books were proposed to the participants by the DECITRE BOOKSHOP and INTERNET access by cable was provided by LYONNAISE CABLE.

The symposium showed the vitality of the research in the field of intelligent instruments and components. During the closing session, Prof. Pedro ALBERTOS, the IPC Chairman, thanked the participants for their attendance and their contribution in discussions. He also congratulated the National Organization Committee for an excellent venue and organization.

Finally, it was announced that the next SICICA will be held in Buenos Aires, Argentina, in 2000.

Prof. Laurent Foulloy, Chairman NOCs

Robot Control – SYROCO

IFAC Symposium (5th)

Nantes, France, 3 – 5 September, 1997

SYROCO was the fifth of the IFAC series of triennial symposia of Robot Control. Previous events in this series were held in Barcelona (Spain), in 1985; Karlsruhe (Germany) in 1988; Vienna (Austria) in 1991; and Capri (Italy), in 1994. SYROCO'97 was held in Nantes, France, from 3 – 5 September, 1997. The Chairman of the IPC was Bernard Espiau from INRIA Rhone Alpes, the Chairman of the NOC was Wisama Khalil from IRCyN (Econe Centrale de Nantes).

As in the case of the Capri conference, a special effort was made to intensify the promotional activities so as to stimulate the participation of qualified researchers. To achieve this, the typical mass mailing of the Call for Papers to big lists of 'unknown' persons with a wide range of interest was avoided and alternative ways were pursued:

A mailing list containing about 3000 names of researchers in robotics was used. Addresses were taken from the address list of the SYROCO '94, the lists of participants of recent conferences in robotics (IEEE ICRA '96), etc. The call for papers was distributed at all major international conferences on Robotics and Control which had been held since May 1996 (e.g. IDMMME in Nantes, ICRA '96, ARK '96, CSME in Canada, June '96, WAC in Montpellier, the IFAC World Congress, USA '96, the CDC in December '96 in Japan). As a result of these efforts 200 papers were submitted to the International Program Committee.

To help fund the Conference, financial supporters were contacted both in industry and in public

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institutions. Supporters from industry were those that participated in the conference exhibition. Financial support was provided by public institutions.

The paper selection was the task of the IPC. The members of the IPC made sure that each paper would be reviewed by at least two referees. In order to avoid expensive travel and work overload, three members of the IPC (Espiau, Khalil, Canudas) discussed the review reports during a meeting in Grenoble. The other members were consulted via e-mail for the selection of the plenary sessions. As a result, 130 papers were accepted of which 126 were included into the final program. Of the remaining four, two were no-shows without explanation. The other two withdrew their papers as they had to cancel their participation. Of the 126 papers, 36 came from French researchers, 15 from the USA, 13 from Italy, 10 from Germany, 9 from Japan, 9 from Belgium, 8 from Canada, 6 from Poland, 5 from Russia, ... About 25 countries were represented at the Conference.

The final technical program consisted of 33 sessions held in 3 parallel tracks during the three days of the Symposium. The accepted papers were published in a three-volume set of Preprints. The papers cover a range of topics relevant to the field of robot control, including modelling and identification,

force and compliance control, robot control techniques (adaptive, robust, learning, ...), vision control, grasp control, flexible robots, non holonomic robotic systems, walking robots, control design and architectures, teleoperation, and underwater robots.

The IPC invited three plenary speakers: Professor Steven Dubowsky (MIT, Cambridge, USA) spoke on 'A Perspective of the Advancement of Robotic Systems during the Past 15 Years'; Professor Shankar Sastry (University of California) presented a lecture on 'Air Traffic Management Systems; At the Intersection of Control Theory and Robotics'; Professor Friedrich Pfeiffer (TU Munich) gave a lecture on 'Robots with Unilateral Constraints'. 2 % of the accepted papers were submitted by industry, with 32 persons from industry participating in the meeting.

On 2 September, three Tutorials were organized, with 32 participants, most of them from industrial companies. These Tutorials dealt with the following subjects: Robot Manipulator Interaction with Environment: Force and Motion Control; Control Systems with Compensate for Friction; Modelling and Control of Wheeled Mobile Robots: Theoretical Results and Applications.

W. Khalil, NOC Chairman
B. Espiau, IPC Chairman

Algorithms and Architectures for Real-Time Control (AARTC'97) IFAC Workshop (4th) Vilamoura, Portugal, 9 - 11 April 1997

The Portuguese National Member Organization was the host of the Workshop, which was held at Vilamoura Marina Hotel, Vilamoura, Portugal.

This Workshop was the fourth in the series. Previous Workshops in this area were held at Bangor-UK, September 1991, Seoul-Korea, August/September 1992, and Ostend-Belgium, May/June 1995.

The objective of the Workshop was to investigate the state of the art and to present new research and application results in software and hardware for real-time control, as well as to bring together engineers and computer scientists who are researchers, developers and practitioners, both from the academic and the industrial world.

In a new development for this IFAC Workshop series, the International Program Committee decided to ask for submission of full draft papers, and to encourage special sessions with well defined themes. Also, as a result of a large number of requests, "Late Breaking Extended Abstracts" were admitted to the Workshop. "Late Breaking Extended Abstracts" consisted of short papers (2 pages) which described very recent research results. We were delighted with the high quality of the original 115 contributions received, and it subsequently proved difficult to select the 86 papers which constituted the Final Programme.

Two well-known international experts in the field were invited by the IPC to present plenary lectures. They were:

Professor Pedro Albertos (Spain): Real-Time Control of Unconventionally Sampled Data Systems;

Professor Peter Kopacek (Austria): Real-Time Control in Factory Automation.

There were also two successful Special Sessions: Processor Architectures for Control (organized by Professors Roger Goodall and Jörg Winkler), and Parallel Architectures for Real-Time Signal Processing and Control (organized by Professor António Ruano).

Furthermore, 65 regular and "late breaking" papers, from 20 countries were presented in 16 technical sessions during the three days of the Workshop. This was a highly successful event which stimulated much discussion both within the sessions, during the breaks and at the social events; all this helped to reinforce the strength of the AARTC community.

The 6th Workshop of the TC on Algorithms and Architectures for Real-Time Control will take place in Cancun, Mexico, April 1998. Cancun is a world famous tourist resort, and AARTC'98 will certainly continue the tradition of outstanding technical and social interaction. Those readers who are interested in AARTC'98 please contact Professor Fabian Garcia-Nocetti at fabian@uxdeal.iimas.unam.mx.

A. E. Ruano, NOC Chairman

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Modelling and Control in Biomedical Systems IFAC Symposium Warwick, UK, 23 - 26 March, 1997

This was the Third IFAC Symposium in a series on Biomedical Systems, previous events being at Galveston, USA in 1994 and at Venice, Italy in 1988. For this occasion, the scope of the Symposium was enlarged to include biological systems modelling and control. The event was organised by the Institute of Measurement and Control on behalf of UKACC (United Kingdom Automation Control Council) and was co-sponsored by IMEKO Technical Committee TC13 (Measurement in Biology and Medicine).

The choice of topics solicited for the meeting covered the major systems components and functions of complex physiology. The extension beyond mammalian physiology was highlighted by a special session devoted to modelling and control of botanic systems, with an aim to provide cross-fertilisation of ideas with biomathematicians. The various sessions were devoted to: Control Applications in High Dependency Medicine; Cardiovascular Modelling; Identification and Control; Pharmacokinetic and Pharmacodynamic Modelling; Metabolic Systems; Biomedical Applications of Signal Processing; Respiratory and Neuromuscular Modelling; Modelling and Control of Biological Systems; and Modelling and Control of Glucose Dynamics.

Being multi-disciplinary in nature, the Symposium attracted practitioners in engineering, mathematics, medicine and biology, with authors from 26 countries representing the 90 accepted papers. Three keynote addresses were given, the first from an industrial viewpoint by Peter Pringle of Elektra Oncology Systems Ltd. This illustrated the complex technology and high cost of modern medical therapy equipment, together with unsolved scientific and engineering challenges which still remain in designing such machines. The second keynote lecture, by David D'Argenio from the University of Southern California, was devoted to an overview of systems methodologies being used in pharmacokinetics/pharmacodynamics design, estimation and control. The final keynote lecture, given by Peter Young from Lancaster University, also developed the theme of systems techniques and their relevance, in this case, to biological processes. In addition to the other main oral presentations, the authors for the poster sessions gave a 2 minute overview using 2 slides at the beginning of their respective sessions. This was judged to be a very successful method of introducing both the subject material and the authors prior to the interactive circulating times. Another feature considered to be highly worthwhile was that all of the poster material was kept on display throughout the Symposium, thus allowing opportunity for extensive viewing and re-visiting by delegates. Lively discussions and useful contacts were made as a result of this.

Considerable progress is clearly being made in biomedical modelling and control, both in methodologies and applications, but problems are evident in the obtaining of research funding and the maintaining of academic interest over long periods of time. The two problems are interrelated, since academic promotion prospects are often coupled to funding opportunities. Also, there is still a need to involve clinicians at a deeper level, and particularly for longer periods, in systems projects which are not only multidisciplinary in nature but also notoriously difficult in terms of experimental procedures, data capture and complexity in structure and behaviour. Thankfully, there is an international core of researchers who are persevering in this work, which offers significant benefits in terms of the provision of quality of life improvement. It is always encouraging to see the number of younger researchers who are highly motivated by these areas

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Preview

Neural Modeling of Chemical Plant Using MLP and B-Spline Networks

(G. Lightbody, P.O. Reilly, G.W. Irwin, K. Kelly and J. McCormick)

Rejecting Rotational Disturbances on Small Disk Drives Using Rotational Accelerometers

(D.Y. Abramovitch)

A Mode-Switching Controller with Initial Value Compensation for Hard Disk Drive Servo Control

(T. Yamaguchi, K. Shichida, S. Tohyama, Y. Soyama, H. Hosokawa, H. Ohsawa, H. Numasato, T. Aral, K. Tsuneta and H. Hirat)

Dynamic Modelling and Control of Resonant Switch Mode Converters

(B. Baha and M.O. Tokhi)

Iterative Looming Identification of Aerodynamic Drag Curve from Tracking Radar Measurements

(Yanguan Chen, Yhangyun Wen, Huifang Dou and Mingcuan Sun)

Point-to-Point Robot Control under Actuator Constraints

(R. Kelly, V. Santibanez and H. Berghuis)

Temperature Control in a Crystal Growth Process by p-Synthesis

(F. Polnard, G. Metrat and E. Irving)

Intelligent Real-Time Fault Diagnosis of Greenhouse Sensors

(S.A. Beulah and Z.S. Chatabi)

Preface to the Special Section of Intelligent Vehicle Highway Systems

(J.K. Hedrick and M. Tomizuka)

The Automated Highway System: A Transportation Technology for the 21st Century

(M. Broucke and P. Varaiya)

A Survey of Present IVHS Activities in Japan

(S. Tsugawa, M. Aoki, A. Hosaka and K. Seki)

Longitudinal and Lateral Control and Supervision of Autonomous Intelligent Vehicles

(H. Holzmann, Ch. Halfmann, S. Germann, M. Württenberger and R. Isermann)

Vehicle Speed and Spacing Control via Coordinated Throttle and Brake Actuation

(J.C. Gerdes and J.K. Hedrick)

Experimental Results of a Tire-Burst Controller for AHS

(S. Pathwardan, H.-S. Tan and M. Tomizuka)

IFAC Meeting Papers - Keyword Listing

Control of Industrial Systems (CIS'97), May 1997, Belfort, France

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Robust Shape Control in a Sendzimir Cold-Rolling Steel Mill

(D.G. Bates, J.V. Ringwood and A.M. Holoban)

Sensorless Induction Motor Drive: An Innovative Component for Advanced Motion Control

(T.-H. Chin, I. Mlyashita and T. Koga)

Control of Flexible Spacecraft Using Nonlinear Approximation of Input Shape Dependence on Reorientation Manoeuvre Parameters

(D. Gorinovsky and G. Vukovich)

A Robust Adaptive Controller for Constant Turning Force Regulation

(F.J. Carillo and F. Rotella)

Accurate Decision-Making for Timely Washing of Substation Insulators, Based on Pollution Model

(S. Goto, M. Nakamura, N. Nanayakkara and T. Taniguchi)

Data Token Heuristic Scheduling of the Kalman Algorithm onto a Message Passing Multiprocessor System

(V. Vaidehi and G.N. Krishnan)

Preface to the Special Section on Biomedical Control

(E.R. Carson)

Uncertain Pharmacokinetic/Pharmacodynamic Systems: Design, Estimation and Control

(D.Z. D'Argenio and Kyungsoo Park)

Closed-Loop Control of Depth of Anaesthesia: A Simulation Study Using Auditory Evoked Responses

(D.A. Linkens, M.F. Abbod and J.K. Backory)

Neural Predictive Controller for Closed-Loop Control of Glucose Using the Subcutaneous Route: A Simulation Study

(Z. Trajanoski, W. Regitnik and P. Wach)

Autonomic Function Assessment Using Analysis of Heart Rate Variability

(R.A. Bates, M.F. Hilton, K.R. Godfrey and M.J. Chappell)

On Improving Physical Selectivity in the Treatment of Cancer: A Systems Modelling and Optimization Approach

(O.C.L. Haas, K.J. Burnham and J.A. Mills)

A Circulatory Model for the Estimation of Insulin Sensitivity

(A. Mart and A. Valerio)

Sensor Validation in Biomedical Applications

(M.J. Leshy, M.P. Henry and D.W. Clarke)

Optimal Sampling Schedule Design for Positron Emission Tomography Data Acquisition

(Dagan Feng, Xianjin Li and Wan-Chi Siu)

IFAC Meeting Papers - Keyword Listing

Manufacturing Systems: Modelling, Management and Control (MIM'97), February 1997, Vienna, Austria

Computer Aided Control Systems Design (CACSD'97), April 1997, Gent, Belgium

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of study. Hopefully, society at large will encourage them to continue in these exciting endeavours.

All of the papers presented at the conference are included in the Proceedings published by Elsevier Science (ISBN No 0 08 042601 8). In addition, a special issue comprising an extract of outstanding papers from the event will be published in IFAC's Journal Control Engineering Practice (CEP). The venue at Radcliffe House, University of Warwick provided a high quality, warm and friendly integrated environment for all of the technical and social aspects which go to making meetings like this a success. In particular, the National Organising Committee was grateful for the dedicated support given by the local Warwick team of Professor Keith Godfrey and Dr Mike Chappell. Amongst the many duties performed, Keith Godfrey acted as the "Lord of the Manor" (complete with crown) at the "Medieval Banquet" at Coombe Abbey. Goading the delegates, especially those from overseas, into singing songs such as "The Grand Old Duke of York" was an interesting spectacle! Thanks are also due to Karen Whines of the Institute of Measurement and Control for her sterling efforts in organising the successful Symposium.

D A Linkens, IPC and NOC

Mathematical and Control Applications in Agriculture and Horticulture International Workshop (3rd) Hannover, Germany 28 Sept. - 2 October, 1997

For the 3rd time, an IFAC/ISHS Workshop on "Mathematical and Control Applications in Agriculture and Horticulture" was organized, where leading experts working in this interdisciplinary field came together and exchanged their ideas and results. As permanent sponsors for this series of workshops, we had again the main sponsorship of IFAC - the International Federation of Automatic Control, represented by its German National Member Organization, the VDI/VDE-Gesellschaft Mess- und Automatisierungstechnik (VDI/VDE-GMA) -, and the co-sponsorship of ISHS - the International Society for Horticultural Science. Due to the location of the event, EurAgEng - the European Society of Agricultural Engineers - and VDI-MEG - the Max-Eyth-Gesellschaft für Agrartechnik im VDI - acted as further sponsors of the meeting.

The organisation of the sessions was almost identical to the two preceding events, which took place in Matsuyama/Japan in 1991 and at Silsoe/United Kingdom in 1994. In order to guarantee a substantial amount of discussions among all participants, no parallel sessions were held.

The workshop has incorporated a wide-ranging programme, covering the principal areas where mathematical models or control engineering can have a major impact on agricultural and horticultural processes and their management. Emphasis was placed on applications of models and control in agriculture and horticulture.

The eight oral and two poster sessions organized for this workshop reflected this broad scope: Models and control are most effective for the well controllable conditions in greenhouses, which resulted in three oral sessions on this topic as well as several poster presentations. The demand for non-destructive, rapid sensing of product quality led to a vivid development in acoustical and optical sensors, which was demonstrated in a special session. Also the classical field of agricultural machinery is influenced by new methods, which were presented in a further session. The sixth oral session on plant physiology and pathology was most closely related to environmental and biological science; best of all it revealed the interdisciplinary approach of the workshop. Whereas most of the above-mentioned topics were related to production processes, a further session was concerned with post harvest technology, being equally important for the final product. The last but not least session of the workshop was devoted to animal houses. This topic is of increasing interest in modelling and control applications, and its close relationship to greenhouse modelling and control stimulated the scientific discussion.

Organization and venue of the workshop guaranteed a fruitful event with high-ranking scientific discussions. At the same time, a climate was provided for an open-minded exchange of ideas. The demand for production of food and raw materials for an increasing number of inhabitants on our planet without causing harm to the environment shows us the need for a highly developed production technology. The workshop contributed towards meeting this demand by presenting technology for a sustainable agricultural and horticultural production.

Axel Munack
IPC Chairman

Papers

- Cascaded Control of Feedback Interconnected Non-linear Systems: Application to Robots with AC Drives
(E. Panteley, R. Ortega)
Quality and Basis Functions for Robust H2 Performance Analysis
(K.C. Goh, F. Wu)
Neural Control of Turbogenerator Systems
(D. Flynn)
Adaptive Control of Nonlinear Dynamic Systems Using O-Adaptive Neural Networks
(S.H. Yu, A.M. Annaswamy)
Mixed Discrete/Continuous Specifications in Sampled-data H2-optimal Control
(L. Mirkin, Z.J. Palmor)

Brief Papers

- On the Complexity of the Robust Stability Problem for Linear Parameter Varying Systems
(C. Toker)
System Approximation Algorithms Generated by Summations
(F. Schipp, J. Bokor)
Robust Adaptive Output Feedback Control of Non-linear Systems without Persistence of Excitation
(B. Alolwi, H.K. Khalil)
On Invariant Sets for Constrained Discrete Time Linear Systems with Disturbances and Parametric Uncertainties
(E. de Santis)
Implicit Force Control for Industrial Robots in Contact with Stiff Surfaces
(P. Rocco, G. Ferretti, G. Magnani)
An Approximation Approach to H(infinity) Control Problems for Distributed Parameter Systems
(M.G. Yoon, B.H. Lee)
A Finite-Difference Method for Linearization in Nonlinear Estimation Algorithms
(T.S. Schei)

Technical Communiques

- Automated System Monitoring and Diagnosis via Singular Value Decomposition
(J.L. Maryak, L.W. Hunter, S. Favin)
Experiments on Output Tracking with Internal Stability by Learning for a One-link Flexible Arm
(P. Lucibello, S. Panzieri)
The Role of the Unitary Interactor Matrix in the Explicit Solution of the Singular Iq Output Feedback Control Problem
(B. Huang, S.L. Shah)
A Characterization of Realizable Behaviour in Supervisory Control of Timed Event Graphs
(S. Takai)
Optimal Input Design Using Generalized Binary Sequence
(J.K. Chen, C.C. Yu)
A Laboratory Plant for Feedback Theories
(J. Glaria, L. Molina)
A New Method for Variable Structure Control System Design: A Linear Matrix Inequality Approach
(H.H. Choi)

Book Reviews

- Stochastic Processes, Estimation and Control: The Entropy Approach, by George N. Saridis
(B. Ninness)
Robust and Optimal Control, by Kemin Zhou, John C. Doyle and Keith Glover
(M. Weiss)

Editorial

- Obituary: N.B. Nichols
(S. Kahne)

Papers

- Robust Time-Optimal Control of Constrained Linear Systems
(D.Q. Mayne, W.R. Schroeder)
Feedback Invariants of Supplementary Pairs of Matrices
(I. Baragana, I. Zaballa)
Robustness Analysis with Full-structured Uncertainties
(P.M. Young)
A Subspace Algorithm for the Identification of Discrete Time Frequency Domain Power Spectra
(P. van Overschee, B. De Moor, W. Dehandschutter, J. Swevers)
Galerkin Approximations for the Generalized Hamilton-Jacobi-Bellman Equation
(R.W. Beard, G. N. Saridis, J.T. Wen)

Brief Papers

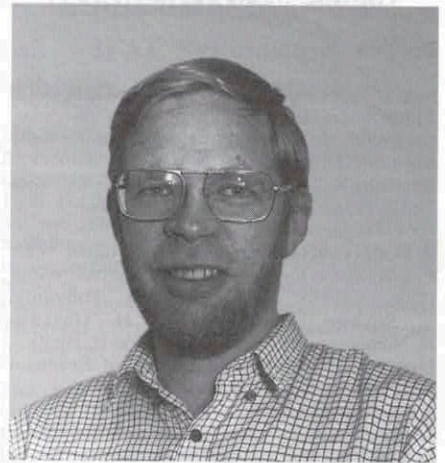
- Algorithm of j-spectral Factorization of Polynomial Matrices
(F.A. Aliev, V.B. Larin)
Robust Performance with Fixed and Worst-case Signals for Uncertain Time Varying Systems
(P. Blanchini, S. Miani, M. Szaier)
Direct Learning of Control Efforts for Trajectories with Different Magnitude Scales
(J.X. Xu)
Robust Stabilization of MIMO Nonlinear Time-varying Mismatched Uncertain Systems
(W.H. Wang, C.B. Soh, T.Y. Chai)
Output Tracking Control of Uncertain Nonlinear Second-order Systems
(G. Bartolini, A. Ferrara, E. Usai)
Adaptive Algorithms for the Rejection of Sinusoidal Disturbances with Unknown Frequency
(M. Bodson, S.C. Douglas)
Frequency Domain Design of PID Controllers for Stable and Unstable Systems with Time Delay
(Z. Shafiel, A.T. Shenton)
H infinite Sampled-data Synthesis and Related Numerical Issue
(M. Cantoni, K. Glover)
Study of Predictive Controller Tuning Methods
(K.Y. Rani, H. Unbehauen)
Exponential Stabilization of an Underactuated Autonomous Surface Vessel
(M. Reyhanoglu)
Constrained Optimal Estimation and Control
(C. Arduini, F. Curti)

Technical Communiques

- Fast Gain Scheduling on Tracking Problems Using Derivative Information
(S.H. Lee, J.T. Lim)
Indirect Closed-loop Identification by Optimal Instrumental Variable Method
(Y. Zhang, C. Wen, Y.C. Soh)
Sufficient Stability Conditions for the Weighted Minimum Uncertainty Prediction Controller
(K. Le, A. Tzes)
An Algorithm for Interpolation with Positive Rational Functions on the Imaginary Axis
(C. Mosquera, F. Perez)

Book Review

- Discrete-time Control Systems, by K. Ogata
(P. Zagalak)



Prof. Torsten Söderström
Council Member

Torsten Söderström was born in Malmö, Sweden in 1945. He received the MSc degree in engineering physics in 1969 and the PhD degree in automation control in 1973, both from the Lund Institute of Technology, Sweden. He is a Fellow of IEEE.

In the period 1967 – 1974 he held various teaching positions at the Lund Institute of Technology. Since 1974 he has been working at the Department of Technology, Uppsala University, where he is a professor of automatic control and has been the head of the Systems and Control Group since 1975.

Dr. Söderström is the author or co-author of many technical papers. His main research interests are in the fields of system identification, signal processing and adaptive systems. He is the (co)author of four books: Theory and Practice of Recursive Identification, MIT Press, 1983 (with L. Ljung); The Instrumental Variable Methods for System Identification, Springer Verlag, 1983 (with P. Stoica); System Identification, Prentice Hall, 1989 (with P. Stoica); and Discrete-Time Stochastic Systems, Prentice Hall, 1994. In 1981 he was, with co-authors, given an Automatica Prize Paper Award.

Within IFAC he has served as a member of the TC on Applications 1984-90, and the WG on Control and Signal Processing 1991-92, and as vice-chairman of the TC on Modelling, Identification and Signal Processing, 1993-present. He was the Chairman of the Swedish NMO 1987-96, has served as an IPC member for a number of IFAC conferences and was the IPC Chairman of the IFAC SYSID '94 Symposium. Within the IFAC Journal Automatica he was an associate editor 1984-91, guest associate editor or editor for three special issues, and has been an editor for the area of system parameter estimation since 1992. He was elected member of the IFAC Council for the period 1996-99.

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