
Three Italian scholars

Giuseppe Evangelisti (1903-1981)

*Scientist of Hydraulics and
pioneer of Automatic Control and Computer Science in Italy*

Giuseppe Evangelisti was born in Molinella near Bologna, Italy on November 25, 1903. He graduated cum laude in civil engineering at the University of Bologna in 1927. After a period of professional activity, in 1931 he joined the School of Engineering of the University of Bologna, where he obtained the "libera docenza" in Hydraulics (1936) and became Full Professor of Hydraulic Constructions in 1939.

At the outbreak of the Second World War Giuseppe Evangelisti was already a well-known scientist who was famous in particular for his brilliant results on the theory of the water hammer phenomenon and on the regulation of hydraulic turbines, on which his first work was published in 1941. During that difficult period of both moral and material reconstruction of the country he took advantage of his scientific reputation to renew relations, that had broken down for some time, with colleagues and university institutes within and outside Europe, encouraging visits, exchanging information and ideas and taking an active part in cultural initiatives in Italy and abroad. He was involved in many fields where he showed great competence and enthusiasm: as a member of the Supreme Council of Public Education expert in university problems, as a scientist famous for his work in hydraulics in the National Committee of the Association of the Companies Supplying Electrical Energy, and as a high level consultant of public and private companies for the reconstruction of the country and the exploitation of its resources.

In the framework of these activities and commitments, at the beginning of the fifties he organized a trip to the USA, precisely to the Massachusetts Institute of Technology to outline the state of the art in Italian hydraulic research. It was this exchange of ideas and experience on the theme of regulation that inspired the deep conviction, that was to characterize his subsequent activity for about twenty years, of the decisive and innovative importance of the newly emerging disciplines of Automatic Control and Computer Science. From then on Giuseppe Evangelisti used his scientific authority and organizational ability to found (1956) a Computing and Servomechanism Centre in Bologna, that was among the first in Italy, and set up university courses in Automatic Control and Electronic Computers, and finally a series of annual courses for the preparation of programmers and seminars specializing in the new techniques of control and computer-aided design for technicians of a variety of firms and national companies, in particular ENI and ENEL.

Giuseppe Evangelisti was very active not only at local and national level, but also at international level. It is mainly thanks to his personal sensitivity and scientific reputation that Italy became, through an ad hoc Committee of the CNR (National Research

Council), one of the first eight countries to officially join IFAC in 1957, at the constitution meeting held in Paris (see *Automatica*, How IFAC developed, vol. 14, no.1, p.73). In fact, by joining a small group of enthusiastic scientists and technicians from different countries, he played a remarkable role during the period of preparation of IFAC and the early years before and after the First World Congress in Moscow in 1960. He attended the famous Heidelberg 1956 Conference and was among those who signed the well-known resolution "in favour of an international union of Automatic Control".

As national representative he was elected member of the first Executive Council of IFAC (see Fig. 2 in *Automatica*, vol.14, no.1, p. 55) from 1957 to 1961, and in this position contributed to the organization of the EC Meeting in Rome (March 1959) and the General Assembly in Chicago (September 1959). During the first Congress in Moscow in 1960 Giuseppe Evangelisti presented a technical paper and served as session chairman.

Giuseppe Evangelisti's scientific and technical work was characterized by broadness of interest, always supported by a rare explanatory clarity and an original and rigorous mathematical approach. Mention must, in particular, be given to his fundamental contributions on the analysis of the water hammer in pressure water pipes, on the stability of permanent motion along channels, and on the realization of electrical simulators for complex transportation networks of liquids and high pressure gas. Finally, his pioneering book, *The Regulation of Hydraulic Turbines*, published by Zanichelli, Bologna, 1947, can be considered one of the first organic treatises of automatic control methods and the first control application of this specific subject.

His outstanding research work has achieved world-wide acknowledgment. He was a member of many academies and cultural institutions: Accademia Nazionale dei Lincei, Accademia delle Scienze dell'Istituto di Bologna, Istituto Lombardo di Scienze e Lettere, Académie des Sciences de Toulouse, Institut Belge de Régulation et d'Automation, Association Suisse pour l'Automation. Professor Evangelisti was also a member of the Supreme Council for Public Education from 1945 to 1954 and of the Supreme Council for Health from 1964 to 1969. He received the Gold Medal for Education from the Italian Ministry of Public Education in 1966 and the doctoral degree honoris causa from the Technische Universität of Munich, Bavaria in 1971 and finally he was awarded the title Professor Emeritus of the University of Bologna.

Giuseppe Evangelisti, as well as being a respected scientist, was an unforgettable teacher in many different areas (Hydraulic Constructions and Plants, Electrical Communications, Automatic Control, Applied Mathematics, Circuit Theory, Vibrations of concrete structures) and a constant source of inspiration to both colleagues and students alike. He will be remembered by all those that met him as a man of great humanity, affability, culture and faith. During the last period of his life, made difficult by illness, before he passed away on January 18, 1981, he was writing about the relationship between Man and Automation and the ever-present problems deriving from the possible dominance of the new technologies over the true values of mankind. His conclusion was that the existence of such serious problems apparently without a definite answer indicates nothing other than "the smallness of someone who is sent into raptures by his earthly world without ever seeing anyone above him or higher than him".



Giuseppe Evangelisti

Giorgio Quazza (1924-1978)

The IFAC Gentleman

Giorgio Quazza was born at Mosso, a small town not far from Biella, Italy, in 1924. After classical studies in the lyceum, he enrolled in the Politecnico of Turin in November 1941, where he passed his first examination in June 1942. As a student in engineering he was very distinguished. However, the dramatic war events of those days led him to join the Italian Resistance Movement in September 1943. He was still able to study somewhat, and he sustained his 13th examination when he was already engaged in the Italian Resistance Movement in the mountains of Val Chisone (Giaveno) in the Italian Alps. Here, on the 4th of December 1944, during a roundup he was taken prisoner. After a period in a prison camp of Bolzano, on the 11th of January 1945, he was sent to the concentration camp of Mauthausen where he had to remain until May 1945 when the camp was freed by the arrival of the Allied Armies. He was then down to his last physical resources, weighting only 40 Kg.

When he returned from Mathausen, after a period of physical rehabilitation, he resumed his studies in the summer of 1945, and in the period from the 15th of September 1945 to the 30th of November 1946 he was able to pass 25 exams. He also prepared his thesis, devoted to the stability of large power transmission lines, with the final presentation in December 1946.

Having concluded his university studies, he spent a period in a company in Turin working at the control of electrical machines; then, he moved to the U.S.A. for three years (1950 – 1953), first at MIT and then at the Brooklin Polytechnic Institute. His studies focused on the emerging theory of servomechanisms, and for this he obtained his Doctor's degree in 1953.

Returning to Italy, he worked again as control system designer in industry, until he joined the Italian Electrical Power Agency (ENEL) in Milan in 1964. Here he created the Automatic Control Research Center (Centro Ricerca di Automatica - CRA) in 1967. The purpose of this Center was to cope with control problems in the electrical generation system of Italy. His research activity ranged from servomechanisms and analogue computing to speed governors for thermal and hydro –electric power systems. His studies of the control of interconnected power systems remain as a distinctive milestone contribution. Furthermore, he succeeded in working out the first analytical dynamic models of a drum boiler. Soon, he became acknowledged world-wide as an expert in on-line power system control and his advice was frequently sought by national and international organisations outside Italy. He also taught courses on feedback control systems and process control in different Italian universities and in particular at the Politecnico of Milan. In this University, where Carlo Costadoni was already teaching

“Industrial Electronics and Servomechanisms” since 1956, Giorgio was called to teach in the period 1971 – 1979.

Within IFAC, Giorgio Quazza was active in the Technical Committees for more than 10 years, first as Vice- Chairman of the Technical Committee on Systems Engineering from 1969 to 1972 and then as Chairman of the Technical Committee on Applications from 1972 to 1975. Moreover, he was elected to the Executive Council of IFAC in 1975. In all these tasks he was appreciated not only for his efficiency, but also for his humour and presence.

As one can read in his obituary in *Automatica* (Vol.15, 1979) “unassuming and modest in the extreme yet always friendly and cheerful, he brought to any activity in which he took part a serenity and sense of purpose as seen in few. In any committee on which he sat he contributed original ideas and would always play his full part in following them up despite the heavy load placed on him as Director of the Automatic Control Research Center in Milan.” ...

“No-one has given more generously of his time and energies to IFAC and his advice and judgements, always given in his inimitable friendly and cheerful manner, have done much to guide IFAC smoothly and sensibly during a period of inevitable and important changes. If ever there was an obvious future President of IFAC it was Giorgio Quazza”.

But, to the regret of all, a mountaineering accident in 1978 robbed IFAC and the control engineering community of one of its most illustrious and hardworking members. His corpse was found in a deep crevice after days of continuous search on the 11th of August; it is presumed that his death occurred two days before, on the 9th of August. Giorgio was planning a cross of the glacier Ventina in the Mount Rose, from Ayas to Zermatt, in company of a close friend. The friend could not reach him, so he decided to make the crossing alone. In Zermatt he had an appointment with Professor John Coales, former president of IFAC, for a trip together in the mountains.

Giorgio Quazza will be remembered as one of the towering figures of control engineering of the past century, and a man of many qualities, the most eminent one being the fact that he was a person upon whom any one could place complete reliance in time of trouble.



Giorgio Quazza and his mountains

Antonio Ruberti (1927-2000)

For a period of about twenty years, from the late 50's to the mid 70's, Antonio Ruberti has been the "prime mover" (as a foreign colleague kindly addressed him in a workshop held in 1992 on the occasion of his 65th birthday) in developing teaching and research in Automatic Control in Italy.

He was born near Naples, Italy in 1927 and graduated in electrical engineering from the University of Naples in 1954. He then joined a group of young researches, active in Rome under the aegis of the Italian Department of Communications. This was a time when, in Italy, the areas of communication, computation and control were gradually establishing themselves as academic fields separated from the stream of traditional electrical engineering. In this research group Antonio Ruberti became the leader of the team active in the area of automatic control. In this capacity, he was appointed member of the Italian delegation which, led by Professor Evangelisti of Bologna, in the years 1956-58 participated to negotiations which eventually gave birth to IFAC.

In 1960, Automatic Control was officially established as an autonomous discipline in the Italian University system and the first three "abilitations" to teach such discipline were awarded: to Antonio Lepschy, Giorgio Quazza and Antonio Ruberti. In 1964, the first chair of Automatic Control was established in Italy, at the University of Rome, and Antonio Ruberti was hired to occupy this position.

These were years when "classical" automatic control was profoundly renewed by new talents and new ideas, and what was then called "modern" automatic control was in full bloom. Antonio Ruberti, since ever particularly sensible to the importance of mathematical rigor in the formulation and solution of engineering problems, saw this as an opportunity and convinced a number of Italian fellows working in the area of automatic control to put more emphasis on a strong methodological approach. Soon, he became the reference person for the entire national community in the field. In 1969, the academic researches active in the field met for the first time, at the Politecnico di Milano, to establish an informal coordination group of which Antonio Ruberti was unanimously appointed chairman.

At the University of Rome, he founded in 1969 the Istituto di Automatica, and a joint research Center of the National Research Council. In this capacity, he also fostered the establishment of strong relations with similar academic groups in other countries, notably within United States. This created an incubator and provided the appropriate channels for a large number of young talents who eventually were able to establish their own international reputation, not just in automatic control, but also in operation

research and computer engineering. In these years, he personally contributed to some fine advances in systems and control theory, such as the remarkable contributions to bilinear systems theory, from which the “Rome school” earned a lasting reputation.

In 1973, he was asked by several colleagues to consider a career shift into academic administration. He was elected Dean of Engineering, a position that he kept for four years, to become in 1976 the first engineer to be elected to the position of Rector Magnificus of the University of Rome. He was re-elected to this office three times, and kept the position for 11 years, until 1988, when he became member of the Italian Cabinet, as Minister of the Scientific Research, a position he kept for about five years. In this capacity, he was instrumental in the modernisation of the Italian University system, promoting new legislation leading to a profound renewal of the old bureaucratic and centralised structure.

In the years 1993-95, he was appointed Commissioner of the European Union for Science and Research, a job that he held with the passion of the person who had long lived science and research as a personal interest and always felt this as his primary choice in life. As a matter of fact, after he left this job, when he was once invited to give an honorary speech at the opening of the academy year at the University of Rome, he began his allocution by saying: “I now feel I am at home and I am glad to be back here”.

Since 1996, he was a member of the Italian House of Representatives, head of the Commission for European Union policies, a position that he held until his sudden and untimely death in September of 2000.



Antonio Ruberti



*The Italian control community at a meeting at the Università di Roma La Sapienza
for the Lection Magistralis of Antonio Ruberti in the occasion of his retirement
November 8, 1999*

50 years of IFAC events in Italy

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«GIORNATE DELLA SCIENZA»

6. SESSIONE

INDETTA DAL C.N.R. CON LA COLLABORAZIONE DEL
COMITATO NAZIONALE PER LA PRODUTTIVITÀ

CONVEGNO INTERNAZIONALE
SUI PROBLEMI
DELL'AUTOMATISMO

MILANO, 8-13 APRILE 1956

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WELCOMING ADDRESS

Professor Giovanni Polvani

President, National Research Council of Italy
Rome, Italy

The National Research Council, of which I have the honor to be the President, responsive as always to all scientific problems, was pleased to accept the proposal of Professor Marino, President of the Italian Committee for Automation, to invite the IFAC Theory Committee to hold the Symposium on auto-adaptive systems in Rome as well as the meeting of the Committee itself.

I thank Professor Petrov, Member of the Soviet Academy, who was kind enough to accept this invitation, and would like to extend to him the most cordial welcome, as also to Professor Truxal, to whom we owe the scientific organization of the Symposium, to the members of the IFAC Theory Committee, and to all the scientists gathered here.

I will not touch on the subjects on the program, of which Professor Marino, Professor Petrov, and Professor Truxal will speak authoritatively in the course of this same session, and more especially because I do not wish to spend time which would be better devoted to the full program of work to be carried out. However, I do wish to underline the importance which the Research Council and I personally attach to automation, not only in its more concrete technical aspects and in its more spectacular realizations, which make a great impression on the imagination of the general public, but also and above all in the work of scientific research through which the indispensable foundations for this progress are laid. Many of the matters to be dealt with in the next sessions are already of a direct applicative interest, while other ones will refer to less immediate problems. The recent rapid evolution of technical science in all sectors, however, has accustomed us to place the most implicit trust in the possibilities of practical realization of almost everything scientists can foresee, and has brought us to realize the importance of what may perhaps appear to be the most abstract studies to practical and applicative ends.

I already expressed my wish of taking away the least possible time from the schedule of work and, in accordance with this desire, I close my address by wishing the Symposium every success, in the hope that the scientists gathered here in Rome will enjoy their stay among us and that the technical visits listed in program may give them the opportunity of seeing, or seeing again, some parts of our beautiful country.

FOREWORD

With the advancement of instrumentation and control as its major objective, the Instrument Society of America is pleased to serve as the publisher of the English version of these proceedings. Increased considerations of adaptive systems make this symposium timely because researchers throughout the world today are focusing attention on the means for structuring and analyzing these systems. The Instrument Society of America commends the International Federation of Automatic Control for their efforts to bring together specialists from many parts of the world for this exchange of information.

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Numerical Control Programming Languages

Proceedings of the
1st International IFIP/IFAC PROLAMAT Conference, Rome 1969

Edited by **W. H. P. LESLIE**
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National Engineering Laboratory, East Kilbride, Glasgow*



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FOREWORD

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May I express the gratitude of the profession to the authors and discussors who have contributed to this volume, and to the individuals below who are largely responsible for organizing the conference.

Edwin L. Harder*
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ON

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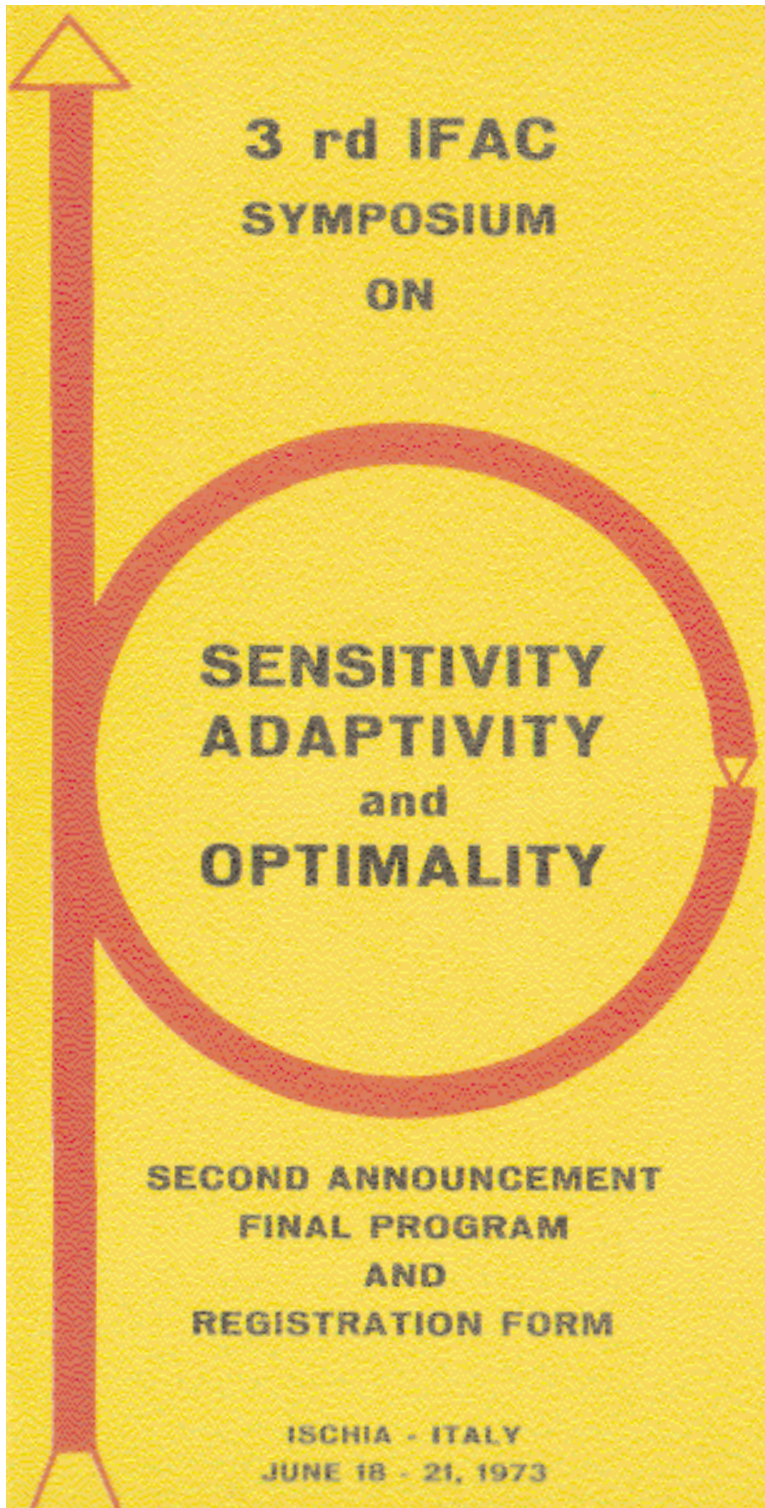
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Ischia, June 18-21, 1973

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PROGRAM

Monday, June 18

9.00 - 9.30	Opening session	
9.30 - 10.30	Invited paper	W.R. PERKINS A Survey of Reduced Order Sensitivity Models
10.30 - 12.30	Technical session	Sensitivity Analysis
15.00 - 16.00	Invited paper	B.E. KALMAN Structural Properties of Dynamical Systems
16.00 - 18.00	Technical session	Optimization under Uncertainty
Evening	Cocktail party	

Tuesday, June 19

9.00 - 10.00	Invited paper	Y. C. HO, K. C. CHU Information Structure in Dynamic Multiperson Control Problems
10.00 - 12.00	Technical session	Min-Max Strategies and Differential Games
Afternoon	Round Table	

Wednesday, June 20

9.00 - 10.00	Invited paper	V. I. UTKIN, S. V. EMEL'YANOV Variable Structure Systems Versus Uncertainty
10.00 - 12.00	Technical session	Sensitivity Methods
15.00 - 16.00	Invited paper	P. KOKOTOVIC Sensitivity Functions and Reduced Order Modeling
16.00 - 18.00	Technical session	Large Scale Systems

Thursday, June 21

9.00 - 10.00	Invited paper	YA. TSYPKIN Present and Future of Adaptive System Theory
10.00 - 12.00	Technical session	Adaptive Systems
15.00 - 16.00	Invited paper	I. D. LANDAU A Survey of Model Reference Adaptive Techniques (Theory and Applications)
16.00 - 18.00	Technical session	Techniques of Sensitivity Reduction

IFAC SYMPOSIUM
ON
LARGE SCALE SYSTEMS
THEORY
AND
APPLICATIONS



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UNDER DIFFERENT
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SOCIAL CONDITIONS**

*Proceedings of the IFAC Symposium
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SINGULAR PERTURBATIONS IN SYSTEMS AND CONTROL

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PREFACE

Over the past decade, singular perturbation theory has been applied to problems in systems and control. The singular perturbation approach has resulted in increased insight into dynamical and other systems and has led to high-efficiency computational algorithms. Consequently, the field has rapidly expanded to become one of the most active research areas in systems and control.

The 1982 Seminar on Singular Perturbations in Systems and Control brought together many of the leading researchers in singular perturbations for the purpose of providing a current, comprehensive review of the subject. The seminar was co-sponsored by the International Centre for Mechanical Sciences (CISM), the International Federation of Automatic Control (IFAC), the Italian National Research Council, the United Nations Educational Scientific and Cultural Organization (UNESCO), and the National Aeronautics and Space Administration (NASA). It was held at the CISM facility in Udine, Italy.

The Program Committee for the Seminar consisted of M. Ardena, P. Kokotovic, and R. O'Malley. The 24 attendees (representing ten different countries) heard thirteen invited lectures and participated in many fruitful discussions.

This volume is composed of the collected papers from the 1982 Udine Seminar. The types of systems considered in these papers include linear and nonlinear, discrete and continuous, and stochastic and deterministic. Both ordinary and partial differential equations are covered. The emphasis is on a concise statement of the existing theory. It is hoped that this document will provide a useful reference for both the theorist and the practitioner interested in singular perturbations in systems and control.

Finally, I would like to express my gratitude to the CISM staff, and particularly to Paolo Serafini, for their hospitality and their diligence in organizing and conducting the Seminar.

Mark D. Ardena, Editor
October, 1982

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**Modelling and Control
of
Electric Power Plants**

Como, ITALY

22-23 September 1983



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CONTROL APPLICATIONS OF NONLINEAR PROGRAMMING AND OPTIMIZATION

*Proceedings of the Fifth IFAC Workshop,
Capri, Italy, 11-14 June 1985*

Edited by

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*Dipartimento di Informatica e Sistemistica,
University of Rome "La Sapienza", Rome, Italy*

Published for the

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SAFETY OF COMPUTER
CONTROL SYSTEMS 1985
(SAFECOMP '85)
Achieving Safe Real Time
Computer Systems

*Proceedings of the Fourth IFAC Workshop
Como, Italy, 1-3 October 1985*

Edited by

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International Federation of Automatic Control



FIRST SYMPOSIUM ON

Modelling and Control in Biomedical Systems

VENICE, Italy - April 6-8, 1988

Fondazione Giorgio Cini
Isola di San Giorgio Maggiore

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"THE JUBILEE OF INNOVATION CHOICE"

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Programma finale

Final program

Venezia, "Scuola Grande di San Rocco"
12 - 13 - 14 Ottobre, 1988

Venice, "Scuola Grande di San Rocco"
October 12 - 13 - 14 th, 1988

PROGRAMMA

MERCOLEDÌ
12 OTTOBRE

Mercoledì

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PROGRAM

WEDNESDAY
OCTOBER 12 TH

Wednesday

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FIRST ANNOUNCEMENT - CALL FOR PAPERS



International Federation of Automatic Control

SYMPOSIUM
on

**NONLINEAR
CONTROL SYSTEMS
DESIGN**

**14-16 June 1989
CAPRI - ITALY**

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THE
RICCATI EQUATION
IN
CONTROL, SYSTEMS AND SIGNALS

VILLA GALLIA, COMO (ITALY) - JUNE 26-28, 1989

a workshop
sponsored by
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with the participation of
I.E.E.E. - Control Systems Society

POLITECNICO di MILANO
Dipartimento di Elettronica
and
Centro di Tutela dei Sistemi C.N.R.

JACOPO

FRANCESCO

RICCATI

THE RICCATI EQUATION



Count Riccati

During his lifetime, Count Jacopo Francesco Riccati (b. VENEZIA 1878, d. Trieste 1754) became well known for his method of separation of variables in the solution of differential equations of constant kind. One of the equations he considered was named after him in many countries of the period. For instance, in the "Traité de Calcul Infinitésimal pour servir de suite à l'Analyse des infinitésimes positifs", by le Marquis de L'HÔPITAL (Paris, 1756), one

can find the following passage (page 6): "À cette Équation $a^2 dx + x^2 p dx + m = 0$, cette Équation devient la forme Équation par tout les Géomètres connutent sous le nom de l'Équation de Riccati". More than two centuries later, the Riccati equation has become an important instrument in Control Systems and Signals.

Purpose of the meeting

The purpose of the meeting is to present a coherent picture of the main results achieved in the last 30 years on the Riccati Equation. Theory, applications and numerical algorithms will be considered, with emphasis on its relevance to systems control and filtering, Linear-Quadratic-Gaussian problems, identity optimization, network synthesis, etc. There will be 46 opening lectures by D.E. KALMAN - Santa Federal Institute of Technology, CA,

Switzerland and University of Florida, Gainesville, Florida, USA - three tutorial lectures by A. LAUB - University of California at Santa Barbara, USA - M.A. NAATMAN - University of Maryland, USA - and J.C. WILLEMS - Groningen University, The Netherlands - a invited lecture and several papers.

Language

The language of the meeting is English.

Program committee

A. BITTANI - Politecnico di Milano, Italy
A. LAUB - University of California at Santa Barbara, USA

J.C. WILLEMS - Groningen University, The Netherlands
H.K. WILMOR - University of Wisconsin, West Germany

FRANCESCO

RICCATI

Invited speakers

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- B.S. BOYD - *University of Southern California, USA*
- A. BURGELERSTNER - *Universität Bielefeld, West Germany*
- B. BYLDES - *University of Kansas, USA*
- M. GIFFERS - *Université Catholique Louvain, Belgium*
- K. GLOVER - *Cambridge University, UK*
- D. HINRICHSEN - *Universität Bremen, West Germany*
- T. KAILATH - *Stanford University, USA*
- V. KUCERA - *Czechoslovak Academy of Science, Czechoslovakia*
- V. KUMARAN - *Texas A&M University, West Germany*
- J.B. MOORE - *Australian National University, Australia*
- T. NISHIMURA - *Institute of Space and Aeronautics, Japan*
- L. RICHMAN - *College of William and Mary, USA*
- L.M. SILVERMAN - *University of Southern California, USA*
- J.L. SPEYER - *University of Texas at Austin, USA*
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- G. De Nardin - *Centro Teoria dei Sistemi C.N.R., Italy*

Contributed papers

There is time allotted for high quality conventional papers. Only papers with original results will be accepted. Proposers authors are invited to submit 3 copies of an extended abstract or draft manuscript in English to the Chairman at the following address:
 Professor S. Bittanti,
 Dipartimento di Elettronica - Politecnico di Milano
 Piazza Leonardo da Vinci 32 - 20133 Milano (Italy)
 Telex 2.21993787 - Telex 333467 POKIMMI

The length of the draft should be 3 double-spaced written pages. Authors should also provide a title page, with a 230 x 300 mm abstract, 3 keywords, full address, telephone or telex number.

Deadlines

DECEMBER 15 1988: 3 copies of a 3 pages extended abstract or draft plus a title page to be mailed to the chairman.
 MARCH 15 1989: acceptance notification for conventional drafts.
 END OF APRIL 1989: full manuscripts due.

Workshop location

The meeting will be held at Villa Galia, an 18th century villa located on the shore of Lake Como in Como, Italy. The historic town of Como is easily reachable from Milano either by car (about 40 km) or train. Frequent trains route from Stazione Fermata Nord di Milano, but there are trains from the Stations Centrale or Stazione Porta Garibaldi as well. Alternatively, Como can be reached from Zürich airport by train or by air.

Local arrangements

The Centro di Cultura Scientifica A. Volta will take care of the local organization, including hotel reservation. An early reservation is recommended since Como is crowded with tourists already in June. The address of the Centro is:

Centro di Cultura Scientifica A. Volta
 Villa Olona
 Via Lamona, 1
 22100 Como (Italy)
 Phone number 31.352583
 Telex 380747 CAM CO I
 Email GCASATI @ IRIJO.VK.RITNET

Comes

The phone number of the Centro di Cultura Scientifica A. Volta is expected to change in October or November 1988. The new number will be 31.372213.

In organizing the workshop, the organizers are mainly assisted by the Centro di Cultura Scientifica A. Volta, Villa Olona (Como). The assistance of the Centro di Teoria dei Sistemi C.N.R. (Milano) and Dipartimento di Elettronica del Politecnico di Milano is also gratefully acknowledged.



**International Federation
of Automatic Control**

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International Workshop on
**DECISIONAL STRUCTURES
IN AUTOMATED MANUFACTURING**

**Genova, Italy
September 16-21, 1989**

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LOW COST AUTOMATION
Techniques, Components & Instruments,
Applications

Preprints of the IFAC Symposium, Milano, Italy
8 - 10 November 1989

Edited by

A. DE CARLI

Università di Roma, "La Sapienza", Rome, Italy

CAMS '92

Control Applications in Marine Systems



WORKSHOP
ON
ARTIFICIAL INTELLIGENCE
CONTROL
AND
ADVANCED TECHNOLOGY
IN
MARINE AUTOMATION

Editor: A. TIANO

Genova, Italy, April 8-10, 1992

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International Federation of Automatic Control

**MOTION CONTROL
FOR INTELLIGENT AUTOMATION**

*IFAC Workshop
Perugia, Italy, 27 - 29 October 1992*

**Edited by
A. DE CARLI and E. MASADA**



PERGAMON PRESS



CALL FOR PAPERS

SYMPOSIUM ON ROBOT CONTROL '94



SEPTEMBER 19-21, CAPRI, ITALY

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First Announcement and
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European Control Conference

ECC 95

September 5–8, 1995
Roma, Italy

Under the auspices of the ECCA

In cooperation with IFAC
In collaboration with the IEEE Control Systems Society

SCOPE OF THE CONFERENCE

The European Control Conference is an event that is organized every two years, with the aim to stimulate contacts between scientists active in the area of Systems and Control. The first two conferences took place in Grenoble in 1991 and in Groningen in 1993. The third edition will take place in Rome in 1995. The primary aim of the conference is to promote scientific exchange within the European community and between Europa and other parts of the world.

The scope of the conference includes all aspects of Systems and Control, and ranges from fundamental research to applications in process control and advanced technology. Topics of interest include multivariable control, systems modelling, systems identification, adaptive control, optimal control, filtering, robotics, aerospace systems, neural networks applied to control, and control of chemical processes.

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FORMAT OF THE CONFERENCE

The conference consists of 2794 total hours, 2 days, 1 PM-4 hour, with one hour

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The purpose of the IEEE CCA is to bring together theoretical results and applications in systems and control theory, particularly in regard to basic (conventional, adaptive, precise systems, optimization, or other applied area.

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DCCS'98: 15th IFAC Workshop on Distributed Computer Control Systems Como, Italy, 9-11 September 1998

Call For Papers

Scope

The Workshop will consist of formal presentations, discussions and informal meetings covering recent advances and current issues in theory, applications, and technology of distributed computer control systems.

The topics to be covered at the workshop include, but are not restricted to:

- The role of real-time in DCCS specifications.
- Analysis and design methods for DCCS, including software design methods for predictable real-time behavior.
- Scheduling methods for DCCS.
- Real-time distributed operating systems and databases.
- Real-time communication system architectures.
- Current and future impact of advanced computer system architectures.
- Testing and validation of DCCS, including timing properties.
- Dependability issues of DCCS.
- Industrial applications and experience with DCCS.

Participation

Attendance will be limited by invitation to a maximum of 60 participants. Preference will be given to those who submit abstracts or express interesting organizing specific sessions or panel discussions. Participants are requested to register in advance not later than 30 June 1998.

Extended abstracts

Offers of papers are welcomed from individuals and groups on the topics outlined above. Five copies of an extended abstract in English (1000-2000 words) should be received by the workshop secretariat not later than 10 April 1998. Please include e-mail and fax number with the author's address.

Also, submission via e-mail to dccs98@dsi.unimi.it if the postscript version of the paper is needed.

The invitations to the Workshop will be based on the assessment of the extended abstracts by the Program Committee. The abstracts should outline the contribution that the author intends to make at the Workshop.

Papers

Full papers are to be prepared according to the instructions that will be sent to the authors together with the letters of invitation.

Accepted papers must be presented in person at the Workshop.

Each registered participant will be provided with a copy of the preprint volume including all accepted papers.

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Important dates

Extended abstracts due by	New Deadline 10 April 1998
Selection and invitation	15 May 1998
Registration	30 June 1998
Full papers due by	30 June 1998
Workshop	9-11 September, 1998



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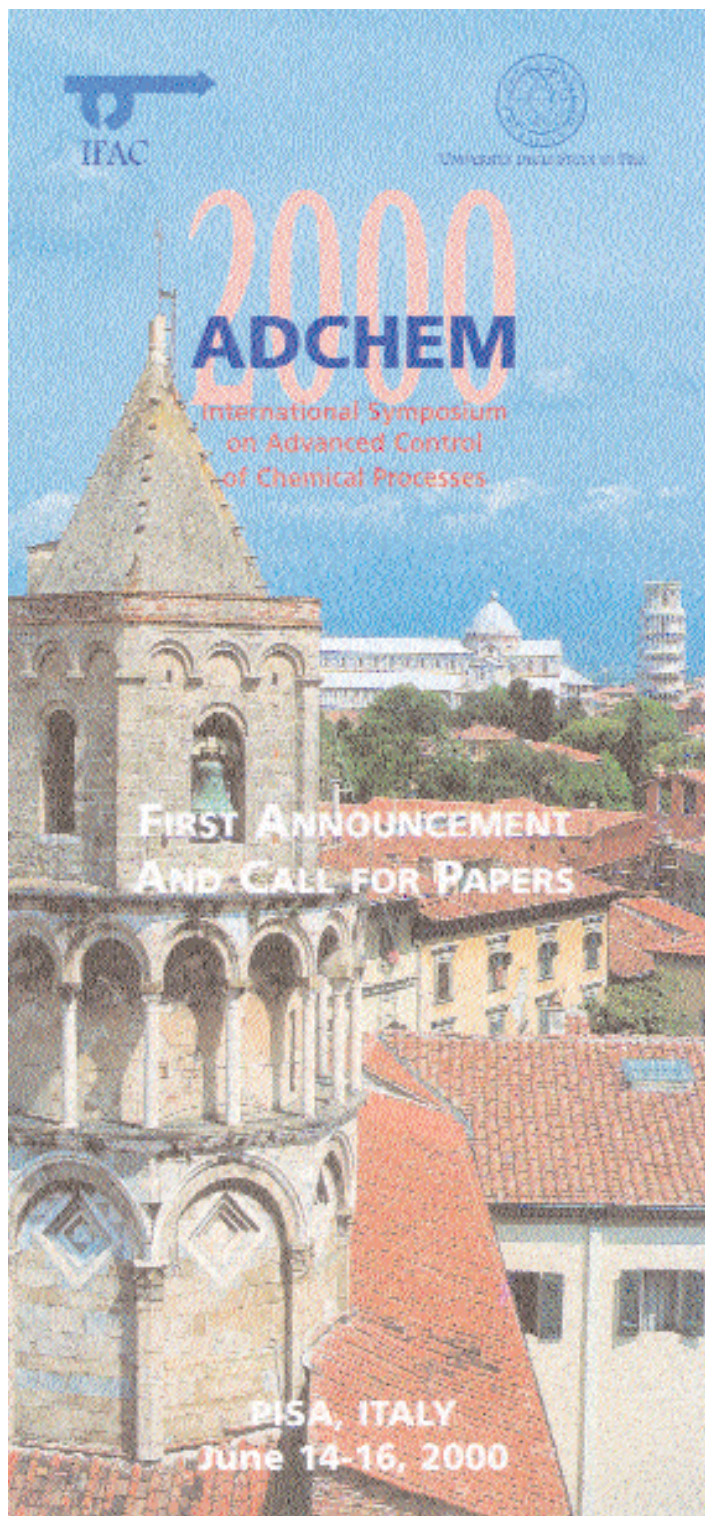
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Workshop on LINEAR TIME DELAY SYSTEMS

Ancona, Italy
September 11-13, 2000



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SCOPE AND TOPICS

Time delay systems appear in modeling a very large number of dynamical behaviors and they are receiving an increasing attention. The workshop is the second in a series initiated by the IFAC Workshop on Linear Time Delay Systems held in Grenoble on July 6-7, 1998. Its aim is to bring together specialists in the field of time delay systems to present the state of the art and to discuss new trends and mutual impacts of their research. Junior researchers are encouraged to attend and participate in the conference. The topics include: Modeling - Structural properties - Controllability and Observability - Stability and stabilization - Design problems - Robustness - Filtering - Numerical methods - Applications - Other

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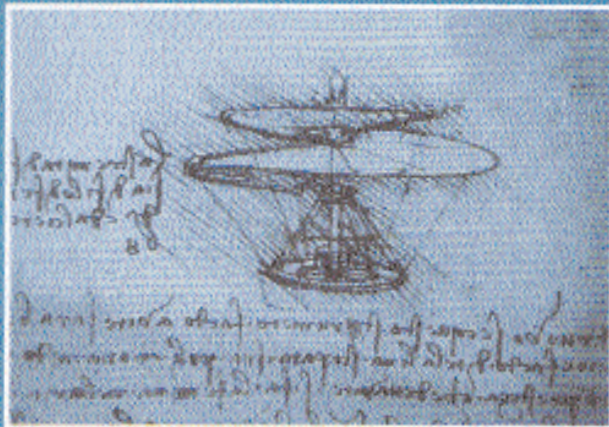
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