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IN MEMORIAM

This Symposium is dedicated to the memory of Dr. Naum S. Rajbman

4 February 1921–8 January 1981

PROFESSOR NAUM SAMOYLOVICH RAJBMAN, Head of a Laboratory at the Institute of Control Sciences (Moscow, U.S.S.R.) died on 8 January 1981. His untimely death has robbed us all of a man of great vitality and unique personality.

Professor Rajbman's professional interests centred around system identification and applications and he developed a new class of methods for identification of nonlinear systems, now known as 'dispersion identification'. He has been an author of the theory of adaptive control with an identifier and has made an essential contribution into identification of hierarchical and distributed systems. N. S. Rajbman published 170 books and papers, and for his contributions he was awarded the State Prize of the U.S.S.R. He has been not only a talented scientist but also a first-class engineer sparing no efforts to implement scientific developments into real control systems. The systems developed with his participation have found a wide range of application from rolling mills to medicine and biology.

N. S. Rajbman has always held very high international scientific cooperation and has done much to develop and strengthen scientific contacts in the field of automatic control. He edited the Russian translations of books by P. Ekyhoff, A. Sage, and J. Melsa; K. Åström *et al.* He participated enthusiastically in the IFAC activities participating in Technical Committees on Applications and Social Efforts of Automation. He was elected more than once to IPCs of IFAC Congresses and Symposia on Identification and he organized the IV Symposium on Identification in Tbilisi (U.S.S.R.) He edited the Proceedings of that Symposium.

Aside from his many contributions to his chosen field N. S. Rajbman will be greatly missed by his many friends, colleagues and students for his charming and effervescent good nature.

To his wife and family we extend our deepest sympathy together with our heartfelt gratitude for all he has given us.

We have lost a dear friend and a wonderful colleague by his example and the inspiration he has given us can never be extinguished.

U.S.S.R. NATIONAL COMMITTEE ON AUTOMATIC CONTROL

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PREFACE

In the tradition of previous symposia, the 6th IFAC Symposium on Identification and System Parameter Estimation presented the "state of the art" in the field. It is evident that identification and estimation are now mature disciplines, so that while the Symposium presented many improvements in techniques and a vast array of applications, there were no major new "breakthroughs." Nevertheless, it is also clear that the field continues to be dynamic and exciting, as demonstrated by the attendance of 360 persons from 36 countries.

As was the case at the Symposium, these Proceedings begin with the papers presented at two Workshops on the State of the Art in "Systems Identification" and "Parameter and State Estimation," respectively. The workshops and other papers point to the increasing interrelationships between identification/estimation and other aspects of system theory, such as control theory, signal processing, experimental design, numerical mathematics, pattern recognition and information theory.

Three sessions were devoted to identification of nonlinear systems, attesting to the growing importance of nonlinearities in models of dynamic systems. The use of microcomputers in system-identification became evident at this conference. We believe that this trend will grow rapidly in the near future as microprocessors are dedicated to real-time identification and control of many industrial processes.

Of particular interest is a group of papers from the Peoples Republic of China which indicate the growing importance of identification in that country.

As in previous symposia, the application sessions revealed the broad spectrum of problems in engineering and science where identification and estimation are being used. Biological systems, traffic control, geophysics, aeronautics, robotics, economics and power systems are examples of the application areas covered in this volume.

The Symposium and these Proceedings are dedicated to the memory of Professor Naum S. Rajbman of the USSR, the organizer of the 1976 Symposium, and an active participant in the other previous symposia. His presence was missed by his many friends and colleagues.

Finally, the Editors would like to take this opportunity to thank all members of the National Organizing Committee and the International Program Committee for their hard work in support of the 1982 Symposium. We also wish to express our appreciation to the Control Systems Society of the Institute of Electrical and Electronics Engineers (IEEE) for its support.

George A. Bekey

George N. Saridis

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