

### Kazimierz Malanowski's 66<sup>th</sup> Anniversary

Kazimierz Malanowski was born on December 19, 1936 in a small village of Śnieżkowice in the region of the Holy Cross Mountains (Góry Świętokrzyskie) in central Poland. His father was an agronomist. In the autumn of 1939 Malanowski's father was mobilized and took part in the September War against the Nazi invasion. After the fall of Poland he left the country for France, where he joined Polish Army. He was killed in June 1940 in Bourgogne. Kazimierz, together with his mother and younger sister, spent the war at his grandparents' in a village in the vicinity of Sandomierz. In 1944 they moved to Sandomierz, where Kazimierz completed his elementary and high school education.

In 1953 he started his university studies at the Warsaw University of Technology and received the degree of M. Sc. in Electrical Engineering in 1958.

Until the end of 1962, Kazimierz Malanowski was employed at the Electrotechnical Institute in Warsaw. At that time, his research interests belonged to the area of magnetic amplifiers. His interest in theory, rather than in engineering practice, prompted him to move to the Polish Academy of Sciences. In 1963, he joined the Institute of Automatic Control, which, after several reorganizations, became the present Systems Research Institute. Kazimierz Malanowski has been employed at this Institute till now.

In 1965 he received the doctoral degree in mathematics from the Mathematical Institute of the Polish Academy of Sciences on the basis of the thesis "*On time-optimal control of linear systems in the case of nonuniqueness*". In 1974 he received habilitation (D.Sc.) from the Institute of Management and Control in Warsaw. The title of his thesis was: "*Some applications of the Fourier method to optimal control problems for distributed parameter systems*". In 1981 Kazimierz Malanowski obtained the scientific title of Professor in Technological Sciences.

Professor Malanowski held different positions at the Institute. Thus, he was, and is, in particular:

- the head of the doctoral studies (1974-76),
- the deputy director of the Institute (1977-80),
- the editor of the quarterly journal "*Control and Cybernetics*" (1978-1984),
- the deputy chairman of the Scientific Council of the Institute (since 1990),
- the head of the Laboratory of Modeling and Optimization of Dynamical Systems (since 1994).

The research carried out by Kazimierz Malanowski belongs to the area of mathematical theory of optimal control. The topics of his particular interest include:

- optimal control of lumped parameter systems,
- optimal control of distributed parameter systems,
- convergence analysis for approximations of solutions to optimal control,
- convergence analysis for numerical methods of solving optimal control problems,
- stability and sensitivity analysis for parametric optimal control.

Kazimierz Malanowski's publication list consists of about 70 papers published in scientific journals and proceedings of international conferences. His most important contributions concern stability and sensitivity analysis for optimal control problems described by ordinary differential equations. They include two monographs: *"Stability of Solutions to Convex Problems of Optimization"*, LNCIS vol. 93, Springer-Verlag, Berlin 1987 and *"Stability and sensitivity analysis for optimal control problems with control-state constraints"*, Dissertationes Mathematicae, CCCXCIV, Warszawa 2001. He was also the editor of nine books and special issue of journals.

Professor Malanowski has developed close cooperation ties with many foreign scientific centers working in the area of optimal control and optimization. That has resulted in joint papers with co-authors from France, Germany and the United States. His longer scientific visits included:

- University of California at Los Angeles (USA), 1968-69 (12 months),
- University of Würzburg (Germany), 1981-1982 (6 months),
- University of Würzburg and University of Bayreuth (Germany), 1990 (3 months),
- University of Bayreuth and University of Münster (Germany), 1993 (6 months).

Kazimierz Malanowski has been frequently invited to present his results on seminars at numerous universities in Europe as well as in the United States, Israel and Japan.

An important field of activities of professor Malanowski involves organization of scientific conferences. He organized five international conferences (1979, 1988, 1993, 1994, 2001) and was often invited to join international program committees of the other ones. Since 1979 he has been the Polish representative in the IFIP TC7 Committee on *"System Modeling and Optimization"*.

Although the main scientific activities of professor Malanowski concern research, rather than teaching, he promoted three doctors and served as a referee of 45 doctoral and habilitation theses, as well as 15 professorship applications.

Kazimierz Malanowski is married, has two children and one grandson.

If one were to describe Professor Malanowski in just two words, a very appropriate choice may then be: a top scholar and an exceptional human being. Indeed, Professor Malanowski is not only an eminent scholar and internationally known, top ranking, specialist in the area of dynamic optimization, but also a man of exceptional human values, unmatched integrity and uncompromising principles. He is extremely - way beyond measures - modest, unassuming and, at the same time, truly responsive to human injustice and wrongdoings.

Many times I saw tears in his eyes when there was a talk, or even a mention, of atrocities of the Nazi occupation or of victims of the Stalin era. He never, ever refused his help or assistance in matters on which his moral judgment and basic fairness dictated his action and involvement. And this was regardless of the direction where "the wind was blowing from" with full apprehension of potential repercussions and negative consequences for his own well-being.

Malanowski is a man of uncompromising principles. He has demonstrated to us all that there are no exceptions in the rules of honesty, dignity and basic correctness in human endeavors. In the years of totalitarian regime in Poland, one could find quite often Kazik's signature endorsing the letters protesting political persecutions. Although research work has been always the main stream of Kazik's activities and he considered this as his paramount duty, at the time the social movement of "Solidarity" emerged into political arena in 1980 in Poland, he could not be just a passive observer. In fact, Kazik initiated one of the "Solidarity" activities run on premises of the Institute of Systems Research of the Polish Academy of Sciences. He organized and sponsored lectures by the "disobedient" historians and politicians, which were also delivered under his own roof in his own apartment. He even set up a library of "prohibited" books. He continued these activities even after the proclamation of the martial law in December 1981. Needless to say, by doing so, he was endangering his own and his family's well being, by risking legal prosecution including political trials. It is proper to add that after the change of political system in Poland, which resulted in "Solidarity" becoming a part of the Establishment, Malanowski withdrew from it. Saying that Malanowski's activities were remote from opportunism is just a big euphemisms and understatement.

On a professional side, Malanowski's involvement in helping to promote high quality science knows no constraints. His knowledge of mathematics and experience has allowed him to assist his colleagues, students, and postdocs in preparing doctoral and habilitation theses. His own time has never been an issue. His generosity is truly boundless. His desire to help and promote strong values has been the only consideration. Many times, I availed myself of his knowledge of mathematics.

Professor Malanowski's hobbies include art history. His knowledge of the subject is very extensive, almost professional. He takes every opportunity, when his busy schedule allows him, to visit historical places. He has visited most of the European countries, USA, Cuba, Japan, Israel and Turkey.

I considered it to be a great honour and personal privilege having been asked by the Editors of this volume to write a short preface for the celebration of 66-th Anniversary of my colleague and friend Kazik Malanowski.

*Jakub Gutenbaum*