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Mathematical Publications

PROFESSOR LUBOMÍR KUBÁČEK

ANATOLIJ DVUREČENSKIJ—GEJZA WIMMER

Professor Lubomír Kubáček, the founder of the Slovak School of Mathematical Statistics, lives to a significant anniversary. He was born on 1st February 1931 in Bratislava. He graduated from the Faculty of Civil and Geodesic Engineering of the Slovak University of Technology in Bratislava in 1954, and two times from the Faculty of Natural Sciences of Comenius University in Bratislava: in mathematical analysis in 1957 and in probability and mathematical statistics in 1964. He worked at the Geodesic Institute in Bratislava in the years 1954–1962 and as a scientific worker at the Institute of Measurement of the Slovak Academy of Sciences in the years 1962–1981. From the year 1981 he was a leading scientific worker at the Mathematical Institute of the Slovak Academy of Sciences, in the years 1988–1991 he was its director. He was conferred upon the scientific degree DrSc. in 1980. He became a corresponding member of the Slovak Academy of Sciences in 1987, a corresponding member of the Czechoslovak Academy of Sciences in 1991. Since 1995 Professor Kubáček has been the director of the Department of Mathematical Analysis and Applied Mathematics of the Faculty of Natural Sciences of Palacky University in Olomouc.

Professor Kubáček's papers from the beginning period of his scientific activity deal with a development of statistic algorithms for a more adequate evaluation of measurement results. They include development of new, more appropriate measurement models. They are based on a deep knowledge of mathematical statistics as well as on a brilliant acquaintance with technological problems. They were always motivated by concrete problems. Professor Kubáček formulated problems and found their solutions on such an abstract level that a solution of a whole class of concrete problems can be reached from there. By his deep consideration of problems of linear regression model, as well as experiments that can be modelled by it, Professor Kubáček formulated 6 typical situations (models) covering the most sophisticated measurements available till now. He models the most sophisticated complexes of scientific experiments by replicated multistage and multiepoch models. Estimating and testing procedures he uses in these models create a view into a future for many areas of science and technology, and are examples of a deep insight into problems by means of very sophisticated and complicated mathematical technologies. Apart from his original and uncommon theoretical results, Professor Kubáček is also an example of a scientist able in an extraordinary way to find mathematical-statistical models as adequate as possible for solution of a practical problems related to a wide variety of scientific and/or technical areas. His solutions are usually to a great degree more adequate and proper than previous solutions.

Professor Kubáček influenced the development of science and mathematical statistics by his direct influence and creating of the Slovak school of mathematical statistics as well as by his collaboration/cooperation with many scientific and scientific-technological institutions in Slovakia. He was a founder and director of the theoretical department, more precisely, the Department of Mathematical Statistics of the Institute of Measurement of the Slovak Academy of Sciences. He creatively collaborated with other departments of this Institute and actively contributed to the development of measurement theory, which became a significant scientific branch of the department founded and directed by Professor Kubáček. At the Institute of Measurement of the Slovak Academy of Sciences, Slovak mathematicians Prof. Dvurečenskij, Dr. Luha, Prof. Pázmán, Assoc. Prof. Pulmannová, Assoc. Prof. Rublík, Assoc. Prof. Štulajter, Dr. Šujan, Assoc. Prof. Volaufová and Assoc. Prof. Wimmer were educated. Professor Kubáček was a tutor of Assoc. Prof. Janiga, Dr. Luha, Dr. Moll, Assoc. Prof. Volaufová, Assoc. Prof. Wimmer and others. Professor Kubáček was a member and chairman of committees for defending of CSc. (=PhD) and DrSc. thesis, a member and chairman of many outstanding scientific committees at the Slovak Academy of Sciences, Comenius University, Slovak University of Technology and elsewhere for dozens of years.

Professor Kubáček was awarded many significant scientific awards. These include:

- Premium of the congress "Federation International des Geometres" for the best scientific paper of a geodesist younger than 35 years, in 1966,
- Silver Honorary Aurel Stodola Plaque for merits in technical sciences,
- Premium of the Slovak Literary Fund for the book "Foundations of the Estimation Theory",
- Memorial Medal of the anniversary of the Slovak University of Technology for significant merits for development of the Slovak University of Technology,
- Honourable Mention of the Faculty of Mathematics and Physics of Comenius University for merits in development of the Faculty, mathematical-physical sciences and their teaching,
- Gold Honorary Plaque of Juraj Hronec for merits in mathematical sciences,
- Gold Plaque of Bernard Bolzano for merits in development of mathematical sciences,

- Gold Medal of the Faculty of Mathematics and Physics of Comenius University,
- Medal of the Slovak Academy of Sciences for merits in development of the science,
- Memorial Medal of the President of the Czech and Slovak Federal Republic, as well as, e.g., Honorary Plaque of the chairman of the Slovak Office of Geodesy and Cartography for merits in development of geodesy and cartography, the Prize of the Committee of the Slovak Medical Society for the best publication in 1975.

Professor Kubáček lectured, acted as thesis tutor, and organized seminars for statisticians from the praxis, he was a leading personality of the Slovak mathematical statistics in many scientific areas; geodesy, medicine, measurement theory, etc.

By the occasion of his anniversary, we asked Professor Kubáček for a short interview concerning his views on mathematics, science and their perspectives.

Question: How do you see today, after so many years of activity, the work in mathematics?

Answer: Substantially, it is the same as in my youth. I perceive several items essential for the work of a mathematician. A spontaneous interest in a problem, more precisely, impossibility to exist without an effort to solve it. Further there is a form of an unsatisfied curiosity to learn something new and—let us confess—also an emotional relationship to work. There always occurs to me a similarity with a musician that cannot live without music, because he/she would be unhappy.

Question: What is and what is not good for mathematics today?

Answer: The decline of interest in theoretical disciplines in general I consider as a very bad. I have an impression—I hope an incorrect one—that many people are interested in university diploma rather than in knowledge. Their choice of a university is influenced by speculations about a lucrative job. Of course, mathematics does not have very much trumps in this game. The social status of a mathematician is not adequate to his/her importance for society. I do not mean only his/her economic evaluation, though it should not be neglected either. Everybody already experienced that a reparation of a TV set, lasting one hour, costs hundreds of crowns, thought for a consultation lasting several hours, he/she receives thanks and shaking hands, sometimes not even that. A further nuisance is a lack of interest in application of mathematics in other professions. Such an interest would undoubtedly lead to a quicker (further) development of mathematics by means of its confrontation with new problems. It is also our guilt. How many of us actively initiate collaboration with physicians, engineers, chemists, etc.? From my own experience I know that in such collaboration very interesting mathematical problems can be found and much new knowledge is possible to gain. Many mathematicians in our country—the situation in the world is more favourable—underestimate this activity. They should first to try themselves, and only then to evaluate. As a positive fact I see the situation that—in spite to the mentioned facts—there exists a certain group of very gifted young people that come with the purest interests to devote themselves to mathematics. A favourable fact— in contrary to the time my youth—is the existence of several mathematical institutions, such as the Mathematical Institute of the Slovak Academy of Sciences and relatively large number of departments of mathematics and the higher education institutions.

Question: What is your opinion on PhD study and its forms?

Answer: The fact of the existence of doctoral study itself is already very positive. Of course, self-education of a mathematician is an irreplaceable constituent of his/her development, but the opportunity to collaborate at least for a few years with a more experienced colleague-tutor undoubtedly significantly accelerates this development. I do not have an unambiguous opinion on the present form of this study in the Slovak Republic and in the Czech Republic. The way how it is carried out in the Slovak Republic is closer to me: one exam in three subjects and the defence of thesis. In the Czech Republic there are more exams, which are divided into eight partial exams; and the state doctoral exam and the defence of thesis. It is clear that in the Czech Republic either there is less time devoted to thesis or the study lasts longer. Moreover, exams are more or less prescribed. I would prefer if the tutor would give a problem and then proposed for it a literature, on the basis of which three, at most four partial exams, related to this literature and therefore individual for each doctoral student, should be passed. I consider a professional exam in three subjects to be very difficult to cope with. What should be decisive is the dissertation.

Question: What is your opinion on contemporary methods of evaluation of scientific work of a mathematician?

Answer: I do not like them very much. Especially I dislike the fact that the methodology of evaluation is unified for different professions. The required characteristics are the number of papers, the number of citations, the number of tutored PhD. students, the number of acquired grants, etc., etc. How it is possible to evaluate by unified criteria, e.g., the work of a surgeon and of a mathematician? Such an evaluation will be either advantageous for a surgeon and worse for a mathematician, or on the contrary. I do not believe that it is possible even to elaborate a methodology based on such characteristics. Let us take into consideration the number of papers. I think it is not necessary to discuss the absurdity of this criterion. Experts in mathematical statistics of my generation certainly remember papers of Professor Winkelbauer, who as papers submitted works with the extent of many dozens, sometimes hundreds of pages. One his paper was equal to dozens of magazine publications. Under such criteria, his evaluation would turn out very badly—and what a mathematician he was! I consider these lower limits of the number of such characteristics—citations, monographs—as absurd. I do not dare to discuss here this very complicated problem in detail. It would deserve a much larger space. In a simplified way I would formulate my opinion in such a way that what is important for evaluation of scientific work of a member of a certain, therefore also mathematical community, is the opinion of this community. This opinion must be, though, based on knowledge of results of his/her activity, i.e., on making acquaintance with his/her papers, rather than on the number of various characteristics, which can be counted by each secretary.

Professor Kubáček is the author and co-author of 7 books, 129 scientific papers, 91 professional papers, 6 lecture notes, 22 research reports and 13 popularization articles. His results were cited in more than 450 scientific papers. He belongs among the most renowned mathematical statisticians in Europe and worldwide.

By the occasion of his birthday, all his former and contemporary colleagues, students, friends, the whole Slovak and Czech mathematical community wishes Professor Kubáček good health and many further successes in solving of mathematical problems.

This proceedings is devoted with thanks to Professor Kubáček.

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