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To the 60th birthday of Zbyněk Šidák


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these Terms of use.
RNDr Zbyněk Šidák, DrSc, who has been the Editor of Aplikace matematiky (now Applications of Mathematics) for unbelievable 25 years, was born on October 24, 1933, in Golčův Jeníkov. He entered Charles University in Prague, Faculty of Science in 1951 and continued his studies at Faculty of Mathematics and Physics when it was founded in 1952. He graduated in mathematical statistics in 1956, having not interrupted his study even when he had to undergo a serious heart surgery in 1955. (In fact, all his life he has been suffering from heart troubles, and his work has been done in defiance of the fate.) His diploma thesis concerned martingales and semimartingales; notice that it was already in 1955!
After graduation, Šidáčk joined the Mathematical Institute in Prague (today a part of the Academy of Sciences of the Czech Republic), and has been working there since then, since 1988 as Head of the Department of Probability Theory and Mathematical Statistics. Without an advisor he worked on his CSc (PhD) thesis and defended it in 1961 (main part of it published in [3]); it concerned Markov chains and was a beginning of his pioneering work analyzing Markov chains from the points of view of both probability theory and functional analysis. His results on the classification and various properties of Markov chains based on operators in Banach spaces and on the study of pertaining eigenvalues, sub- and superharmonic functions, which appeared in a series of papers ([4], [5], [6], [7], [9], [11], [23]) and partially in his DrSc thesis (defended in 1973), are well known and widely cited. Equally well-known is his characterization of conditional expectations as operators in functional spaces (cf. [2]); some authors refer in this respect to “Šidáčk’s identity for operators” and to “Šidáčk’s operators.”

Another area of Šidáčk’s interest, in which he made important advances, was that of inequalities for multivariate probability distributions. For the multivariate normal distribution he proved in [10] the famous and often used “Šidáčk inequality” (sometimes referred to as the “Dunn-Šidáčk-Khatri inequality”) showing that the probabilities of rectangles under arbitrary correlations cannot be smaller than the analogous probabilities under independence of components. Later he generalized and extended this result (cf. [13], [14], [21]) and proved certain inequalities for other classes of distributions (cf. [15], [16]). These results became part of statistical monographs of many authors.

Practical applications of statistics in medicine led Šidáčk to the rank tests, and this was a lucky moment. Throughout the years he published several papers on rank tests, some containing tables of critical values (cf. [1], [17], [18], [19], [20], [22], [24], [25]). However, his most important contribution to this area is his joint monograph with Jaroslav Hájek entitled “Theory of Rank Tests” [8]. It appeared for the first time in 1967, the Russian translation in 1971, and then it was several times reprinted in the U.S.A. This outstanding book provides a systematic and rigorous but surprisingly natural and simple account of the rank tests on the highest level of exposition. Even today it provides the basic source of knowledge in the area and is often cited.

We have only touched the basic fields of Šidáčk’s scientific interest; moreover, he published papers in discriminant analysis (cf. [27], [29]), multiple decision procedures including ranking and selection (cf. [26], [28], [30]) and applications in biology and medicine (e.g., this led to [12]).

We should also mention his excellent activities in organization of science: Aplikace matematiky under 25 years of his editorship has been considered worldwide as a prestigious scientific journal. Moreover, in various years he was the main or-
ganizer of summer schools and conferences on cluster analysis, pattern recognition, data analysis, discriminant analysis, and he worked in Program Committees of the European Meeting of Statisticians 1979 and of COMPSTAT 1984. He has been a member or chairman of many scientific committees and boards. His high scientific reputation led to frequent invitations to foreign universities and institutes. In 1983 he was awarded by the Czechoslovak Academy of Sciences the Silver Bolzano Medal for Merits in the Development of Mathematics.

Šidák’s outstanding and prodigious contributions have pushed the field of mathematical statistics and probability in important new directions. A very modest and honest person, he is held in high respect by his friends and colleagues.

Selected Publications of Zbyněk Šidák


