

## FROM THE EDITORS

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Vladimir Nikolaevich Sudakov has turned 75. He started his research activity as a student of Chair of Computational Mathematics of Faculty of Mathematics and Mechanics, Leningrad State University. In a student research work supervised by I. P. Natanson, he showed that, in the Kolmogorov criterium of compactness for sets in  $L_p(\mathbb{R}^n)$ , one of the two conditions is redundant.

In 1956, Vladimir Nikolaevich graduated (with distinction) from the university and became a PhD student at the Leningrad (now St.Petersburg) Department of the Steklov Mathematical Institute of AN SSSR. His PhD advisor (as well as the advisor of his diploma thesis) was the future Nobel Prize Laureate, L. V. Kantorovich.

At that time, Vladimir Nikolaevich became interested in the theory of random processes; in 1959, after his PhD course, he started to work at the Laboratory of Statistical Methods (then headed by an outstanding mathematician, Yu. V. Linnik). Vladimir Nikolaevich works at the same Laboratory of Statistical Methods of LOMI–POMI until now, i.e., for 50 years. What remarkable numbers are 75 and 50!

Vladimir Nikolaevich was one of the creators of the modern theory of Gaussian processes. In particular, he invented the idea of study of a Gaussian random function  $\{\xi(A), t \in T\}$  by geometrization  $T$  with the help of the natural metric  $p(s, t) = \{\mathbb{E}|\xi(s) - \xi(t)|^2\}^{1/2}$ . I. A. Ibragimov, one of the authors of this text, remembers how Vladimir Nikolaevich told him about these ideas in the beginning of the 1960s, during their joint walks in Petrogradskaya Storona.

Let us list several achievements of Vladimir Nikolaevich:

- using of entropy characteristics in the study of random processes;
- isometric property of half-spaces for Gaussian measures;
- entropy estimate from below for the maximum of a Gaussian process (known in the world as “Sudakov minoration”);
- principle of comparison of Gaussian processes by their covariations (Sudakov comparison principle);
- the existence of a typical distribution of linear functionals in spaces of large dimension with a probability measure (manifestation of the phenomenon of measure concentration);
- solution of the Birkhoff problem – statement and proof of an essentially strengthened variant of the Birkhoff-von Neumann theorem on representation of a bistochastic matrix as a time average of permutation matrices; as a corollary, the Monge transportation problem was solved.

Looking at this long list, we recall what A. N. Kolmogorov said about B. de Finetti: “He had invented infinitely divisible laws; he had invented classes of equivalent events. One such thing would be enough, and he had two.”

We also have to mention the merits of Vladimir Nikolaevich in teaching. He had developed and gave (one of the first in our city) a remarkable course of lectures on the theory of random processes; this course attracted many talented young researchers to this field.

Vladimir Nikolaevich founded the probabilistic series of *Zapiski Nauchnykh Seminarov LOMI–POMI* and was the first editor of this series (for 40 years). The editors and authors devote this issue (the first one which is published without his editorial surveillance) to Vladimir Nikolaevich Sudakov.

Translated by S. Yu. Pilyugin.

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