ANATOLY NAUMOVICH KOCHUBEI
(to 70th birthday anniversary)

Anatoly Naumovich Kochubei, a prominent Ukrainian mathematician, was born in Kyiv on August 26, 1949. In 1971 he graduated from the Faculty of Mathematics and Mechanics, Kyiv Taras Shevchenko State University. In 1972-1991 he was employed in the "Energy Network Design" institute in Kyiv where he worked on problems of applied physics, such as propagation of pulses in multiwire transmission systems, energy transmission by a microwave beam and related problems of ionosphere physics etc. Simultaneously, from his student time he worked on theoretical problems of mathematics. He was, first informally, closely connected with the Institute of Mathematics, National Academy of Sciences of Ukraine (NASU), and in 1992 became a researcher of this Institute (from 2005, the head of its department of nonlinear analysis).

A. N. Kochubei defended both his dissertations in the Institute of Mathematics, NASU his Ph.D. thesis "Spectral Properties of Differential-Operator Equations of Even Order" (1977, Advisor, M. L. Gorbachuk), and Doctor of Science thesis " Differential-Operator Equations and Related Problems of Operator Theory" (1988).

The main directions of his research include evolution equations with pseudo-differential operators, equations of fractal diffusion, pseudo-differential operators over non-Archimedean fields and non-Archimedean stochastics, analysis over fields of positive characteristic, theory of extensions of operators. The most important results of A. N. Kochubei are as follows.

He initiated and developed (together with S. D. Eidelman) the theory of time-fractional evolution equations, which came into focus of interest due to physical applications, such as anomalous diffusion in fractal media, models of statistical dynamics taking into account memory of a system (the latter subject was investigated together with Yu. G. Kondratiev). In a pioneering work, he developed a theory of the Cauchy problem for parabolic pseudo-differential equations with quasi-homogeneous symbols. In particular, that gave the first analytic construction of discontinuous Markov processes.

A. N. Kochubei created new research trends in non-Archimedean analysis (analogs of classical differential equations of mathematical physics, non-Archimedean stochastics, differential equations with Carlitz derivatives over fields of positive characteristic etc). In particular, he was the first to define and study stochastic differential equations over the field of p-adic numbers, to initiate non-Archimedean infinite-dimensional analysis, to study classes of linear pseudo-differential equations appearing in non-Archimedean quantum mechanics, as well as nonlinear equations arising from the p-adic model of porous medium suggested by A. Khrennikov.

At an early stage of his development as a mathematician, A. N. Kochubei suggested a method of abstract boundary conditions in the extension theory of symmetric operators, which was developed by many authors and found applications in a variety of problems of analysis, theory of differential equations and mathematical physics.

All the above results are actively used by mathematicians working in many fields of mathematical research.

A. N. Kochubei is also an author of many publications devoted to operator-differential equations, diffusion processes, ionosphere physics, mathematical models in power engineering. As a whole he published (in leading international publishing houses) three monographs, a two-volume collective monograph, in which he is an editor and one of the authors, and more than 120 research papers, mostly in well-known international journals. He was an invited speaker at international conferences in many countries, delivered lectures in universities and scientific centers of France, Germany, Mexico, Poland, Russia, Sweden, Turkey, USA. He obtained a CRDF research grant, was a principal investigator and participant of a number of other international projects. He is an editor of several international journals, an expert of the Research Executive Agency of the European Commission, a member of Scientific Council of the National Research Foundation of Ukraine.

In 2015, A. N. Kochubei was elected a Corresponding member of NASU. As a sign of recognition of his research work, he was awarded with the State Prize of Ukraine for Science and Technology for 2018.

We wish Anatoly Naumovich good health for many years to come, cheerful mood, and inspiration.

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