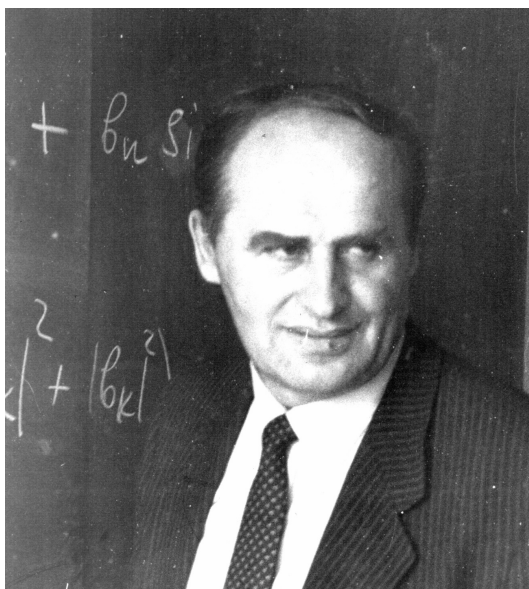


**MYROSLAV LVOVYCH GORBACHUK**  
**(TO HIS 75TH BIRTHDAY)**



Myroslav Lvovych Gorbachuk, an outstanding Ukrainian mathematician, was born on March 8, 1938, in Rybotychi, Przemyśl region (now a part of Poland), in a peasant family with seven children. After the World War II, the family was forced to leave its fatherland and move to Western Ukraine. They settled in the village P'yanovychi, Lviv region, in the home of a local priest. In spite of all difficulties of the postwar life, the parents devoted much of attention to upbringing of the children. The Bible and T. Shevchenko's "Kobzar" were set as the cornerstones in their education. The first book taught how and the other one for whom a man had to live. The children were growing in a musical surrounding: their father was a self-taught violinist and played together with other musicians in rural evening parties, weddings, holy days. Wonderful popular songs, Christmas carols could be heard from every corner of their home. The boy had a nice voice, and after a seven year school, under father's influence, he tried to enter the Drohobych musical teaching institution. But it was not his fortune to be a musician (he did not pass an examination in Russian). So, he continued education at the secondary school located in the neighboring village Biskovychi. He was also fond of mathematics, and gradually mathematics ousted music to background. Having graduated from the school, he entered in 1956 the I. Franko University of Lviv to study this subject at the Mechanics and Mathematics Faculty.

The level of teaching mathematics at the University was high enough. The youth was deeply impressed by lectures of well-known mathematicians I. G. Sokolov and Ya. B. Lopatinsky which left an indelible mark onto all his further life. His graduation work was guided by V. E. Lyantse, an excellent mathematician and highly intelligent person. It was V. E. Lyantse who recommended M. L. Gorbachuk for the post-graduate education at

the Institute of Mathematics of Academy of Sciences of USSR in Kyiv. In 1961 Myroslav became a research student of the Mathematical Analysis Department of this Institute. The education was guided by the Department Head, Yu. M. Berezansky. Under his influence and support, the initial and subsequent M. L. Gorbachuk's scientific interests were formed. An important role was played also by M. G. Krein's works with which he was acquainted as he was still a student of the Lviv University. The first personal meeting with Mark Grygorovych Krein took place when the "golden opportunity" brought a chance to give some talks at the Krein's seminar which was the center of mathematical life in Odessa.

The whole scientific activity of M. L. Gorbachuk was going on at the Institute of Mathematics. Here he obtained both the Candidate/PhD (1965) and the Doctor of Science (1973) degrees in Mathematics for the theses "Positive definite operator-valued functions" and "Some problems of the spectral theory of differential operators in spaces of vector-valued functions", respectively (the scientific adviser was Yu. M. Berezansky), here he held the positions of a junior and a senior scientific researchers at the Mathematical Analysis Department, a chief of the Partial Differential Equations Laboratory, and here, since 1986, he heads the Department of the same name. In 2000, he was elected an associate member of the National Academy of Sciences of Ukraine.

The mathematical works of M. L. Gorbachuk include 3 monographs and about 200 papers which are of high level and quality, and broad in topics. Some of them opened certain directions in the functional analysis, theories of generalized functions, abstract differential equations, approximation of functions. They distinguished themselves by the tendency of penetrating into the historical aspects of development of every subject and searching for something common in, at first sight, too different problems, and finding a general approach that gives a possibility not only to look from a single point of view at these problems but to extend the sphere of problems where this approach might be applied. And in this respect he followed M. G. Krein, who saw a symmetric operator, the "the impressive figure", as he called it, hidden behind the scenes of almost all analytic problems.

Here is a list of main directions around which M. L. Gorbachuk's scientific interests are concentrated: spectral theory of operators, solvability problems for differential equations in a Banach space in various classes of vector-valued functions, initial and boundary value problems for operator differential equations, theory of non-selfadjoint operators, generalized functions and their applications, approximation theory, theory of semigroups of linear operators, harmonic analysis, problems of hydrodynamics, history of mathematics.

In the spectral theory of operators he solved a long-standing problem of describing, in terms of boundary values, various classes of extensions of the minimal operator generated by a differential expression in a Hilbert space and investigating their spectral properties.

M. L. Gorbachuk developed a general (operator) approach to the theory of boundary values for solutions of differential equations. This approach made it possible to obtain from a general point of view a number of classic results, in particular, for harmonic functions, to specify and strengthen them. He described all solutions of differential equations of various types in a Banach space and established the conditions for their stability and stabilization. He found also the conditions guaranteeing the existence of a solution to the Cauchy problem in some classes of analytic vector-valued functions. The essential role when studying differential operators was played by a kind of a theory of generalized functions he developed, in which the basic role was played, instead of the differentiation operator, by an arbitrary closed operator. The Fourier series expansions in generalized eigenvectors of such an operator and the localization principle proved by him allowed to justify some statements from mathematical physics.

In the approximation theory M. L. Gorbachuk has also found the operator approach to direct and inverse theorems, which embraces a lot of well-known and new concrete problems of approximation of functions and gives a possibility to obtain the exact a priori estimates of the approximation error for a solution of an operator equation using the variational methods.

Some results related to functional analysis, operator theory, and hydrodynamics deal mainly with completeness of the set of root vectors of a non-selfadjoint operator, boundary value problems for differential equations with operator coefficients, integral representations of positive definite operator functions, stratified fluid dynamics, the motion of a solid suspended on a string.

For his mathematical works M. L. Gorbachuk was awarded with the State Prize of Ukraine (1998), Krylov Prize (1994), and was the first to obtain the Krein Prize founded by National Academy of Sciences of Ukraine in 2008.

M. L. Gorbachuk is also known to a large mathematical community as one who popularizes mathematics and its history. His lectures dedicated to such prominent mathematicians as Weierstrass, Weyl, Gauss, Voroniy, Ostrogradsky, Hilbert, Banach, Euler, Lagrange, Riemann, Newton, Poincaré, M. Krein, extremal problems, development of the mathematical ideas, like a correlation between discreteness and continuity, the scientific determinism principle and theory of semigroups, and so on, always were interesting for mathematicians of various generations.

M. L. Gorbachuk participated actively in the scientific public work as a President of the Kyiv (1993 - 2006) and then Ukrainian (2005 - 2012) Mathematical Societies. He is a member of Editorial Boards of the "Ukrainian Mathematical Journal", and the journals "Methods of Functional Analysis and Topology" and "In the World of Mathematics", one of the heads of the well-known Kyiv Seminar on Functional Analysis. He is not only a remarkable scientist but an excellent pedagogue. He gave courses of lectures to students and young researchers at the T. Shevchenko University of Kyiv (1965 - 2001) and National Technical University "KPI" (1997 - 2011). He has taught a number of talented students among whom there are 7 Doctors of Sciences and 29 Candidates working in Ukraine and abroad. He generously shares his knowledge and plans with them, as well as with other colleagues.

M. L. Gorbachuk was never insensible to his country Ukraine, its sovereignty, culture, language. Even in the times of the highest level Russification at Ukrainian universities and schools, when a majority of pedagogues turned to the Russian language, he continued to teach in Ukrainian. He is highly educated not only in mathematics and its history. He likes to cultivate plants, flowers, and he does not imagine his life without classical music and Ukrainian folk songs. Let people and flowers smile to him on this spring day, and let good fortune, health, happiness and fruitful work accompany him for many years to come.

*The Editorial Board*