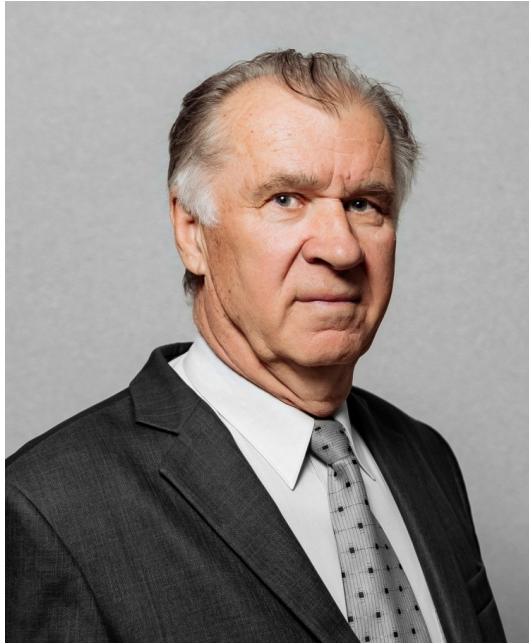




PROFESSOR VASILE NEAGU ON HIS 80TH BIRTHDAY

Vasile Neagu, Full Professor, Doctor Habilitatus in Mathematics and Physics. He is a remarkable mathematician from the Moldovan school of functional analysis, who has made a major contribution to the development of the theory of integral equations and to the training of new generations of highly qualified specialists. His scientific results have been noted and cited by many well-known mathematicians, specialists in the field of integral equations. On November 1, 2025, Professor Vasile Neagu celebrated his 80th anniversary.

He was born in the village of Vărzărești, Nisporeni District, Republic of Moldova. In 1959, he graduated from primary school in Vărzărești; then, in 1963, he graduated with a silver medal from high school in Nisporeni. In the same year he became a student at the State University of Chișinău, Faculty of Physics and Mathematics. After a three-year interruption due to the compulsory military service (1964-1967), he graduated with honors in 1971 from the Faculty of Physics and Mathematics of State University of Chișinău.

In the 1960s, the prominent Moldovan school of functional analysis had already emerged, recognized far beyond the country's borders, founded by the world-renowned

professor Israel Gohberg. The courses “Normal Solvable Operators” and “Singular Integral Operators,” among others, taught by Professors Israel Gohberg and Nahum Krupnik, as well as their scientific publications, had a decisive impact on his career as a scientific researcher. In his fifth year of study, Professor I. Gohberg formulated for him a scientific research topic that proved to be highly promising. The topic concerned singular integral operators with Cauchy kernel in the case of an integration contour with angular points - a subject that continues to be central to Professor V. Neagu’s research.

After graduating from university in 1971, he became a doctoral student at the Department of Mathematical Analysis of the State University of Chişinău, under the scientific supervision of Professor Nahum Krupnik (as Academician I. Gohberg later emigrated to Israel). The research topic had originally been formulated by Professor I. Gohberg. In 1974, Vasile Neagu defended (ahead of schedule) his PhD thesis in physics and mathematics in the specialty 01.01.02 (Differential and Integral Equations), entitled “On Certain Problems of Singular Integral Operators in the Case of Contours with Angular Points”. In 1976, he obtained the scientific-pedagogical title of Associate Professor. In 2003, he defended his Doctor Habilitatus thesis in mathematics in the specialty 01.01.02 (Mathematical Analysis), entitled “Noetherian Conditions and Symbols of Singular Integral Operators in the Case of Piecewise Lyapunov and Unbounded Contours” and in 2004, he was awarded the academic title of Full Professor.

From 1974, V. Neagu was employed as a lecturer at the Department of Mathematical Analysis of the State University. In 1976–2004, he worked as Associate Professor, and from 2004 until 2023 as Full Professor. In 1989–1994, he held the position of Vice-Dean of the Faculty of Mathematics and Computer Science of Moldova State University. Since 2023, he has been a Coordinating Scientific Researcher at Moldova State University. During 1983 -1987, he worked at the University of Oran, Algeria. There he taught complex analysis, functional analysis, and specialized courses to third-year students, as well as integral equations and Fredholm-type operators to master’s and doctoral students. Under Professor V. Neagu’s supervision at the University of Oran, two doctoral students defended their PhD theses in mathematics. Since 1991, Professor V. Neagu has also been working (concurrently) at the Department of Mathematical Analysis and Differential Equations of Tiraspol State University, which merged in 2022 with “Ion Creangă” State Pedagogical University of Chişinău.

Professor V. Neagu’s contribution to the training of new generations of highly qualified mathematicians is significant. He has supervised 6 PhD theses in mathematical sciences, approximately 90 bachelor’s theses, and 40 master’s theses. He is co-author of a textbook for students [3], author (and co-author) of 12 didactic and scientific works for students

of faculties of [4], [5], [6], and co-author of textbooks and collections of mathematical problems for 11th- and 12th-grade students.

Throughout his activity, Professor Vasile Neagu has established himself as a formidable researcher. His scientific activity is related to singular integral equations, Riemann–Hilbert boundary value problems for analytic functions, Carleman-type equations in various functional spaces, as well as conditions imposed on the integration contour.

He is the author of more than 120 scientific publications, published in prestigious journals in Moldova, Russia, Ukraine, Romania, the United States, Georgia, Belarus, and Algeria, including two monographs [1], [2]. The scientific results obtained by Professor V. Neagu have been presented at numerous national and international scientific conferences and symposia in Moldova, Romania, Russia, Ukraine, Kazakhstan, Belarus, and Algeria, as well as at scientific seminars at universities in Moldova, Odesa, Tbilisi, Kyiv, Kharkiv, Alma-Ata, Rostov-on-Don, Bucharest, Minsk, Cluj-Napoca, the Steklov Institute of Mathematics (Moscow), and others. We present the main results obtained by Professor V. Neagu, most of which are contained in his monographs [1], [2].

He defined and constructed the symbol of singular integral operators with piecewise continuous coefficients in the case of piecewise Lyapunov and unbounded contours. This symbol essentially reflects the particularities of the contour. In particular, it depends explicitly on the magnitudes of the angles at the angular points and is defined in a special way at the point at infinity; moreover, the symbol depends on the space and on the jumps of the operator coefficients at their points of discontinuity. He established that the necessary and sufficient Noetherian conditions for singular operators (with and without translation), as well as the formula for their index, are expressed through the operator's symbol.

He calculated the exact constants in the theorems on the continuity of singular operators in weighted spaces and of matrix singular operators in spaces. Using these results, Vasile Neagu was the first to establish certain sufficient conditions under which singular equations (and systems of such equations) with measurable and bounded coefficients are Noetherian in the case of piecewise Lyapunov contours with self-intersection points. Under fairly general conditions imposed on the integration contour, he obtained a method that makes it possible to reduce the study of singular integral equations and the problem of factorization of matrices of functions in weighted Lebesgue spaces to the study of similar problems in unweighted spaces. With the help of the proposed method, and by applying I. Simonenko's local principle, Professor Vasile Neagu established the necessary and sufficient conditions under which singular integral operators with arbitrary measurable and bounded coefficients are Noetherian in weighted spaces. He studied a class of linear and bounded (non-compact) operators that represent admissible perturbations for

Noetherian singular integral operators. These results play an important role in the study of singular operators with discontinuous translations. The difficulties encountered in the study of singular operators with translation in the case of unbounded contours were overcome by Vasile Neagu by passing to a space with a special weight in which the studied operators form an algebra. This approach proved decisive for obtaining the final results. As a result, the study of singular operators with translation was reduced not to characteristic singular operators (as in the case of Lyapunov contours), but to singular operators perturbed by integral operators with homogeneous kernels. For such perturbed operators he established the Noetherian criteria.

He studied various (non-commutative) algebras of singular operators with translation and demonstrated their equivalence to algebras of singular operators without translation. On the basis of these results, he defined the notion of symbol for these algebras and established the Noetherian and invertibility criteria. The matrix symbol of non-commutative algebras of singular operators constructed by Professor Vasile Neagu possesses the same properties as the symbol in I. Gelfand's theory concerning maximal ideals of commutative Banach algebras. He demonstrated that both for Carleman-type singular integral equations with translation and complex conjugation, and for Riemann–Hilbert boundary value problems, the Noetherian conditions and the indices of the equations depend essentially on the presence of angular points on the integration contour. He showed that both the Noetherian conditions and the indices can be expressed through the determinant of the symbol of these equations.

We note that some ideas and results from the works of Professor Vasile Neagu and joint works with Professor N. Krupnik have been used in the realization of several PhD theses in mathematics both in Moldova and in other countries. References to some of his works can be found in the monographs of well-known mathematicians: B. Hvedelidze, G. Litvinciuk, N. Krupnik and I. Gohberg, A. Soldatov, N. Karapetyants, and S. Samko, as well as in numerous scientific publications. They are also used by students and master's students of the faculties of mathematics and computer science in the preparation of bachelor's and master's theses.

Although he is a renowned scientist, Professor Vasile Neagu remains a modest and kind person. He is always attentive to colleagues and students. He is distinguished by his open and friendly nature, generosity of spirit, and fidelity to his word. He possesses an astonishing ability to respect and even consider the viewpoints of others.

The special appreciation of his scientific and pedagogical work has brought him numerous diplomas, titles, and medals, such as: member of the Assembly of the Academy of Sciences of the Republic of Moldova; the “Nicolae Milescu Spătaru” Medal (2020);

the Medal of the Academy of Sciences of the Republic of Moldova; the Medal of Moldova State University; the Prize of the Academy of Sciences of the Republic of Moldova for scientific works (2008). He is also an honorary citizen of the village of Vărzărești, Nisporeni District (2017), and holds a first-category title in chess.

The present volume is dedicated to Professor Vasile Neagu at the age of 80, very active in the academic community, full of vigor and optimism, who has made a significant contribution to the development of mathematics in the Republic of Moldova.

On the occasion of his 80th anniversary, we congratulate Professor Vasile Neagu and wish him good health, continued success and fruitful teaching and research activities.

Happy Anniversary, dear Professor Vasile Neagu!

REFERENCES

- [1] NEAGU, V. *Algebre Banach generate de operatori integrali singolari*. Chișinău: USM, 2005, 252 p.
- [2] NEAGU, V. *Operatori noetherieni cu aplicații*. Chișinău: UST, 2015, 200 p.
- [3] COZMA, D., NEAGU, V. *Analiza complexă*, Chișinău: UST, 2017, 248 p.
- [4] CIOBANU, V., NEAGU, V., TARAGAN, D. *Analiză Matematică. Limite de șiruri și de funcții. Funcții continue*. Chișinău, 2001, 150 p.
- [5] CIOBANU, V., NEAGU, V., TARAGAN, D. *Analiză Matematică. Funcții derivabile*. Chișinău, 2001, 163 p.
- [6] CIOBANU, V., NEAGU, V., TARAGAN, D. *Analiză Matematică. Probleme cu parametru*. Chișinău, 2000, 184 p.

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