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PEOPLE OF SOVIET SCIENCE

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Abstract

Full Text

PEOPLE OF SOVIET SCIENCE

IOSIF ZAKHAROVICH SHTOKALO

(On the Occasion of His 70th Birthday)

On November 16, 1967, Academician of the Academy of Sciences of the Ukrainian SSR Iosif Zakharovich Shtokalo turns seventy. His scholarly work developed in two directions, belonging to different fields of knowledge—mathematics and the history of science. In both of these directions Iosif Zakharovich achieved very significant results; special note should be made of his fundamental studies in the history of Russian mathematics.

Iosif Zakharovich was born in the village of Skomorokhi, Lviv Region, into the family of a poor peasant. After completing the village school he entered a gymnasium, which he managed to finish only at the cost of great effort: throughout the entire gymnasium course he had to give private lessons in order to earn his livelihood. During his gymnasium years there arose in him a love of mathematics, which later became the foundation of his scientific work.

In 1915, together with the retreating Russian troops, Iosif Zakharovich left Galicia and moved to Ekaterinoslav (now Dnepropetrovsk), where he passed the examination for the school-leaving certificate. In that same year his pedagogical activity began, which has continued without interruption for more than fifty years.

After the establishment of Soviet power in Ukraine, Iosif Zakharovich devoted much effort to the construction of the new school. Working as a teacher and then as director of the first Dneprodzerzhinsk secondary school named after F. E. Dzerzhinsky, he set up the teaching of mathematics in exemplary fashion and at the same time himself taught in various courses and in a school for adults, and wrote and published a mathematics manual for factory advanced-training courses.

From 1927 onward Iosif Zakharovich, without interrupting his pedagogical work, studied at the Faculty of Physics and Mathematics of Dnepropetrovsk University, from which he graduated in 1931. In that same year he entered postgraduate study at the Ukrainian Scientific Research Institute of Mathematics and Mechanics in Kharkov. He also combined his postgraduate studies with intensive pedagogical work at the Faculty of Physics and Mathematics of Kharkov University, as well as at other higher educational institutions in Kharkov. In 1934 I. Z. Shtokalo defended his can-

candidate dissertation devoted to the calculation of the pressure of a flow of finite width on a flat plate.

The works of Iosif Zakharovich carried out in the second half of the 1930s concern certain questions in the theory of functions of a complex variable, variational statistics, and the theory of differential equations. It should be noted that, simultaneously with his scientific and pedagogical work, Iosif Zakharovich devoted much time to public activity: at the end of the 1930s he was elected a deputy of the Dzerzhinsky District Soviet of Working People's Deputies of the city of Kharkov. In January 1941 in Kharkov, I. Z. Shtokalo was admitted to membership in the VKP(b).

At the beginning of the Great Patriotic War, Iosif Zakharovich was entrusted with the evacuation of a number of academic institutions from the city of Kharkov to Central Asia and the Urals. After carrying out this assignment, he moved to the city of Ufa, where he began working as a senior research associate at the Institute of Mathematics of the Academy of Sciences of the Ukrainian SSR. In Ufa he continued his investigations in the direction begun by N. M. Krylov and N. N. Bogolyubov in the first half of the 1930s in Kiev and devoted to the development of asymptotic methods of nonlinear mechanics.

In 1943 the Academy of Sciences of the Ukrainian SSR was re-evacuated to Moscow. There, in the same year, Iosif Zakharovich defended his doctoral dissertation, and somewhat later received the title of professor.

In his doctoral dissertation and in a cycle of works of the second half of the 1940s, Iosif Zakharovich obtained a number of very substantial results in the general theory of linear differential equations: to him belongs the determination of criteria for stability and instability of linear differential equations with quasiperiodic and almost-periodic coefficients.

In the work "Asymptotic Methods in the Solution of Certain Classes of Linear Differential Equations with Variable Coefficients" (1945), Iosif Zakharovich investigates a differential equation of the form

$$\frac{dx}{dt} = [A + \varepsilon f(t)]x, \quad (1)$$

where A is a constant matrix, and $f(t)$ is a quasiperiodic matrix. In the work it is shown that the formal solution has the form

$$x = \left[U e^{i\beta t} + \sum_{n=1}^{\infty} \varepsilon^n y_n(t) \right] \xi, \quad (2)$$

where U and β are constant matrices, and the vector ξ satisfies the system

$$\frac{d\xi}{dt} = \left(\sum_{n=0}^{\infty} \varepsilon^n A_n \right) \xi \quad (3)$$

for specially chosen matrices A_n .

A continuation of this work is the well-known investigation by Iosif Zakharovich, “Criteria for the Stability and Instability of Solutions of Linear Differential Equations with Quasiperiodic Coefficients” (1946), in which the author obtained a complete solution of the question of the stability of solutions of differential equations of the form (1). In doing so, he used the asymptotic methods of nonlinear mechanics. The essence of the solution consists in reducing the investigation of system (1)

to the investigation of the auxiliary system with constant coefficients

$$\frac{d\xi}{dt} = \left(\sum_{k=0}^{\infty} \varepsilon^k A_k \right) \xi.$$

Applying the transformation

$$x = \left[U e^{i\beta t} + \sum_{n=1}^m \varepsilon^n y_n(t) \right] \xi, \quad (4)$$

he reduces system (1) to the form

$$\frac{d\xi}{dt} = \left[\sum_{n=0}^m \varepsilon^n A_n + \varepsilon^{m+1} S_m(t, \varepsilon) \right] \xi, \quad (5)$$

where $S_m(t, \varepsilon)$ is a quasiperiodic function, regular with respect to ε in a neighborhood of $\varepsilon = 0$.

Later N. P. Erugin showed the applicability of I. Z. Shtokalo’ s results also to a broader class of nonlinear differential equations of the form

$$\frac{dx}{dt} = [Ax + B(x, t, \varepsilon)]. \quad (6)$$

Thus, the results of this cycle of works are a substantial contribution to the general theory of differential equations.

To the same cycle belongs the work “On the problem of solving linear differential equations of the n -th order with variable coefficients” (1947), in which an equation of the form

$$\frac{d^n x}{dt^n} + a_{n-1}(t) \frac{d^{n-1} x}{dt^{n-1}} + \dots + a_0(t) x = e^{pt}, \quad (7)$$

is considered, where p is a complex parameter, and the coefficients $a_k(t)$ are determined by the expression

$$a_k(t) = a_k^0 + \varepsilon f_k(t) \quad (k = 0, 1, 2, \dots, n - 1), \quad (8)$$

where ε is a small parameter; $f_k(t)$ are bounded functions. Assuming that the real parts of the roots of the equation

$$S^n + a_{n-1}^0 S^{n-1} + \dots + a_1^0 S + a_0^0 = 0 \quad (9)$$

differ from the real part of the parameter p , the author proves the existence, for equation (7), of a unique solution in the form

$$x = \xi(t, p, \varepsilon) e^{pt} \quad (10)$$

and studies its properties.

Approximately from the second half of the 1940s, Iosif Zakharovich also began his investigations in the field of symbolic methods. The first work of this cycle was the article “Generalization of Heaviside’ s formula to the case of linear differential equations with variab—

coefficients” (1946). Generalizing Heaviside’ s results, Iosif Zakharovich showed that the system of differential equations

$$\frac{dx}{dt} = A(t)x + \int_{a-i\infty}^{a+i\infty} e^{pt} \varphi(p) dp$$

has, under certain conditions, a solution in the form

$$x(t) = \frac{1}{2\pi i} \int_{a-i\infty}^{a+i\infty} e^{pt} \omega(t, p) \varphi(p) dp.$$

In the paper “Theory of the generalized symbolic representation of solutions of linear differential equations with quasiperiodic coefficients” (1948), an equation of the form

$$\frac{dx}{dt} - [A + \varepsilon f(t)]x = C e^{pt}, \quad (11)$$

is considered, where A is constant; $f(t)$ is an almost-periodic matrix; p , ε are complex parameters.

Under certain assumptions concerning the roots of the equation

$$\text{Det} \|sE - A\| = 0$$

the existence of solutions of system (11) is proved in the form

$$x = \xi(t, p, \varepsilon)e^{pt}.$$

An important theorem is also proved, establishing the boundedness of the vector ξ with respect to t , provided that $f(t)$ is a bounded matrix-function and the real part of the parameter p is not identically equal to the real parts of the roots of the equation

$$\text{Det} \|sE - A\| = 0.$$

In addition, the analyticity of the vector ξ with respect to the parameters p, ε is proved.

Further results in the theory of the symbolic representation of solutions of differential equations were obtained by I. Z. Shtokalo in the paper "On the form of solutions of certain classes of linear differential equations with variable coefficients" (1952).

In 1960 Iosif Zakharovich continued his investigations of asymptotic methods in the theory of differential equations with variable coefficients. In the monograph *Linear Differential Equations with Variable Coefficients* he studied the problem of the behavior of solutions of linear differential equations with quasiperiodic coefficients that differ little from constant ones as $t \rightarrow \infty$, and, in particular, the problem of finding criteria under which the general solution of an equation tends to zero or is unbounded.

The main idea of the monograph consists in obtaining a "formal Floquet theory." For this purpose, by means of asymptotic methods, a "formal" transformation is constructed that reduces the system of equations under study to a system with constant coefficients.

For this system the coefficients are represented by series arranged in powers of a small parameter. For it Hurwitz determinants are constructed, which are then expanded into formal series in powers

ε . Then: 1) if the first nonvanishing terms in the expansions of all Hurwitz determinants are positive, then the solution of the original system possesses strong stability in the positive direction for sufficiently small values of ε ; 2) if, for at least one of the Hurwitz determinants, the first nonvanishing term in its expansion is negative, then the original system has an unbounded solution as $t \rightarrow \infty$ for sufficiently small ε .

In 1961, Iosif Zakharovich generalized his investigations in the field of operational calculus in the monograph *Operational Methods and Their Development in the Theory of Linear Differential Equations with Variable Coefficients*.

Beginning in 1947, Iosif Zakharovich also worked on questions connected with the history of Russian mathematics. His first works in this field were devoted to the history of science in the nineteenth and early twentieth centuries. Under his editorship, in the early 1950s, the complete collected works of M. V. Ostrogradsky and G. F. Voronoi were published, with detailed scholarly commentaries. The publication was preceded by extremely laborious work in searching for and checking manuscripts and documents related to the creative activity of both classics of Russian science. Iosif Zakharovich himself wrote several essays and commentaries on individual works.

Iosif Zakharovich' s subsequent investigations already concerned the Soviet period in the history of Russian mathematics: he published a number of articles devoted to these questions, as well as the monograph *An Outline of the Development of Mathematics in Ukraine during 40 Years of Soviet Power* (1958).

For a number of years Iosif Zakharovich has directed the work of the Republican Seminar on the History of Mathematics and Mathematical Knowledge at the Institute of Mathematics of the Academy of Sciences of the Ukrainian SSR. As a result of the seminar' s activities, several collections on the history of Russian science were published. The seminar' s work also served as the basis for a major undertaking in the field of the history of mathematics: on Iosif Zakharovich' s initiative, the publication of the multivolume *History of Russian Mathematics* was conceived and carried out—a scholarly undertaking new not only for Soviet science, but also for world science. In creating this work, Iosif Zakharovich had to labor very extensively and very intensively: he not only wrote a number of articles for the publication, but also took the most active part in editing all five volumes of the *History of Russian Mathematics*, carrying out exceptionally intense research and scientific-organizational work.

Iosif Zakharovich' s scholarly work has received universal recognition. In 1948 he was elected a corresponding member, and in 1951 an academician, of the Academy of Sciences of the Ukrainian SSR.

In 1965 I. Z. Shtokalo was elected a corresponding member of the International Academy of the History of Science.

Scholarly work does not exhaust Iosif Zakharovich' s activity: he also carries out extensive pedagogical, public, and scientific-organizational work. In 1944 Iosif Zakharovich became a professor at Kiev University, where he still heads the Department of Differential Equations. For several years he also headed the Department of Higher Mathematics at the Kiev Technological Institute of the Food Industry. For several years Iosif Zakharovich was a member of the directorate of the Institute of Mathematics of the Academy of Sciences of the Ukrainian SSR, where he headed the Department of the History of Mathematics. From 1949 to 1956 he headed the Lvov Branch of the Academy of Sciences of the Ukrainian SSR, and for several years was a member of the Presidium of the Academy of Sciences of the Ukrainian SSR.

At the end of 1962, on the basis of the Department of the History of Mathematics

of the Institute of Mathematics of the Academy of Sciences of the Ukrainian SSR and the Department of the History of Technology of the Institute of Thermal Power Engineering of the Academy of Sciences of the Ukrainian SSR, a Sector of the History of Technology and Natural Science was created, which became part of the Institute of History of the Academy of Sciences of the Ukrainian SSR. The leadership of the sector was entrusted to Iosif Zakharovich, who in a few years succeeded in creating a serious scientific organization carrying out substantial research and publishing work.

At the same time, for a number of years Iosif Zakharovich has headed the commission of the Presidium of the Academy of Sciences of the Ukrainian SSR for the creation of terminological dictionaries. Under his direction, 18 dictionaries in various fields of science and technology have been published.

Iosif Zakharovich' s public activity is many-sided. He was repeatedly elected a member of the Lviv Regional Committee of the Communist Party of Ukraine, a member of the Lviv City Committee of the Communist Party of Ukraine, and was a deputy of the Lviv City Soviet and of the Supreme Soviet of the Ukrainian SSR. He was a delegate to the XVII, XVIII, and XIX Congresses of the Communist Party of Ukraine, at which he was three times elected a member of the Auditing Commission of the Communist Party of Ukraine. I. Z. Shtokalo was more than once a member of the delegation of the Ukrainian SSR to the United Nations. For his many years of scientific, pedagogical, and public activity, Iosif Zakharovich was awarded the Order of Lenin, medals, and certificates of honor.

Iosif Zakharovich meets his jubilee in the full flowering of his creative powers, and one may hope that in both of his scientific fields—in mathematics and in the history of science—he will create many new major studies.

A. N. BOGOLYUBOV, N. P. ERUGIN,
Yu. A. MITROPOLSKY, O. S. PARASYUK

BIBLIOGRAPHY

OF THE SCIENTIFIC WORKS OF I. Z. SHTOKALO

1. A condensed textbook of mathematics for advanced-training courses for workers in heavy industry. Publ. of the Dneprodzerzhinsk Plant, 1928.
2. On the pressure on the edge of finite width upon a plane plate. *Notes of the Kharkov Mathematical Society*, ser. 4, 1934, vol. 10, pp. 93–101.
3. On approximate conformal mapping by means of Chebyshev polynomials. *Collection of Research Works of the Kharkov Textile Institute*, 1939, vol. 1, pp. 169–182.
4. On the question of a necessary and sufficient condition for univalence of functions in $|z| < 1$. *Collection of Research Works of the Kharkov Textile*

- Institute*, 1940, vol. 2, pp. 231–238.
5. Estimation of the modulus of certain coefficients of functions giving a univalent conformal mapping. *Collection of Research Works of the Kharkov Textile Institute*, 1940, vol. 2, pp. 223–230.
 6. An asymptotic method in the solution of certain classes of linear differential equations with variable coefficients. *Reports of the Academy of Sciences of the USSR*, 1945, vol. 46, No. 2, pp. 55–56.
 7. Generalization of the basic formula of the symbolic method to the case of linear differential equations with variable coefficients. *Reports of the Academy of Sciences of the USSR*, 1945, vol. 47, No. 1, pp. 9–11.
 8. Stability and instability criteria for solutions of linear differential equations with quasiperiodic coefficients. *Information Bulletin of the Academy of Sciences of the Ukrainian SSR*, 1945, No. 1, pp. 38–39.
 9. Linear differential equations of the n -th order with quasiperiodic coefficients. *Information Bulletin of the Academy of Sciences of the Ukrainian SSR*, 1945, No. 1, pp. 40–42.
 10. A system of linear differential equations with variable coefficients. *Information Bulletin of the Academy of Sciences of the Ukrainian SSR*, 1945, No. 1, pp. 42–45.
 11. Generalization of Heaviside' s formula to the case of linear differential equations with variable coefficients. *Reports of the Academy of Sciences of the USSR*, 1946, vol. 51, No. 5, pp. 335–336.
 12. Generalization of Heaviside' s formula to the case of linear differential equations with variable coefficients. *Information Bulletin*, 1945, No. 1, pp. 46–50.
 13. Linear differential equations of the n -th order with quasiperiodic coefficients. *Reports of the Academy of Sciences of the Ukrainian SSR*, 1946, Nos. 3, 4, pp. 17–20.
 14. Systems of linear differential equations with quasiperiodic coefficients. *Reports of the Academy of Sciences of the Ukrainian SSR*, 1946, Nos. 3, 4, pp. 21–24.
 15. Generalization of Heaviside' s formula to linear differential equations with quasiperiodic coefficients. *Reports of the Academy of Sciences of the Ukrainian SSR*, 1946, Nos. 3, 4, pp. 25–29.
 16. A criterion for the stability and instability of solutions of linear differential equations with quasiperiodic coefficients. *Matem. sb.*, 1946, vol. 19 (61), no. 2, pp. 263–286.
 17. On the theory of linear differential equations with quasiperiodic coefficients. *Proc. Inst. of Mathematics, Academy of Sciences of the UkrSSR*,

- 1946, no. 8, pp. 163–176.
18. On the question of solutions of linear differential equations of the n -th order with variable coefficients. *Proc. Inst. of Mathematics, Academy of Sciences of the UkrSSR*, 1947, no. 9, pp. 140–161.
 19. Linear differential equations of the n -th order with variable coefficients. Part I, *Tr. KTIPP*, 1947, issue 6, pp. 99–112; Part II, 1948, issue 7, pp. 147–155.
 20. Achievements of mathematical sciences at the Academy of Sciences of the UkrSSR during 30 years of Soviet power. *Visnyk AS UkrSSR*, 1947, no. 8, pp. 64–88.
 21. Application of the stability criterion, connected with the corresponding Hurwitz determinants, to solutions of certain linear differential equations with variable coefficients. *Matem. zb. KDU*, 1948, no. 2, pp. 71–88.
 22. A theory of a generalized symbolic representation of solutions of linear differential equations with quasiperiodic coefficients. *Proc. Inst. of Mathematics, Academy of Sciences of the UkrSSR*, 1948, no. 11, pp. 43–59.
 23. The development of mathematics in the UkrSSR during 30 years of Soviet power. *Proc. Inst. of Mathematics, Academy of Sciences of the UkrSSR*, 1948, no. 10, pp. 5–40.
 24. Linear differential equations with quasiperiodic coefficients. *Matem. zb. KDU*, no. 2, pp. 85–100.
 25. On the control of an electric circuit containing a saturation choke. *Tr. KTIPP*, 1949, issue 8, pp. 27–30.
 26. On the question of generalizing the fundamental formula of the symbolic method. *UMZh*, 1949, vol. 3, no. 1, pp. 51–59.
 27. Generalizing investigations in the field of the general theory of differential equations in partial derivatives. *Matem. zb. KDU*, 1949, no. 3, pp. 19–24.
 28. On the form of solutions of certain classes of linear differential equations with variable coefficients. *UMZh*, 1952, vol. 4, no. 1, pp. 36–48.
 29. **Bogolyubov M. M.** *Matem. zb. KDU*, 1952, no. 6, pp. 117–127.
 30. The works of M. V. Ostrogradsky on mathematical physics. *UMZh*, 1952, vol. 4, no. 1, pp. 3–24.
 31. **G. F. Voronoi.** Complete collected works. Vols. I, II, III. Publishing House of the Academy of Sciences of the UkrSSR, 1952–1953. (Special scientific editing.)

32. The life and scientific activity of G. F. Voronoi. Complete collected works of G. F. Voronoi, vol. III, 1953, pp. 263-304. (Together with I. B. Pogrebisky.)
33. On the publication of the complete collection of scientific works of M. V. Ostrogradsky. *Proc. Third All-Union Mathematical Congress*, 1956, vol. I. (Together with I. B. Pogrebisky.)
34. Achievements in the field of mathematics at the T. G. Shevchenko Kyiv State University during the years of Soviet power. *Matem. zb. KDU*, 1957, no. 10, pp. 5-28.
35. Achievements of mathematics in the UkrSSR during 40 years of Soviet power. In the book: *The Development of Science in the UkrSSR over 40 Years*. Publishing House of the Academy of Sciences of the UkrSSR, 1957, pp. 149-175.
36. **G. F. Voronoi.** *Visnyk AS UkrSSR*, 1958, no. 10, pp. 58-63. (Together with I. B. Pogrebisky.)
37. An outline of the development of mathematics in Ukraine during 40 years of Soviet power. Publishing House of the Academy of Sciences of the UkrSSR, 1958, p. 81.
38. Great achievements. *Science and Life*, 1958, no. 6 (87), pp. 1-17.
39. The development of the natural sciences at the university (mathematics). In the book *History of Kyiv University*, KDU, 1959, pp. 401-419.
40. **M. V. Ostrogradsky.** Complete collected works, vols. I, II, III. Publishing House of the Academy of Sciences of the UkrSSR, 1959-1961. (Special scientific editing.)
41. On the works of M. V. Ostrogradsky on mathematical physics. Complete collected works of M. V. Ostrogradsky, vol. I. Publishing House of the Academy of Sciences of the UkrSSR, 1959, pp. 292-311. (Together with I. B. Pogrebisky.)
42. V. I. Lenin' s work *Materialism and Empirio-Criticism* and the development of Soviet mathematics. *Problems of Philosophy*, 1959, no. 9, pp. 175-176. (Together with M. I. Simonov and P. S. Dyshlevsky.)
43. The philosophical works of V. I. Lenin and certain questions in the development of mathematics. *Visnyk KDU*, 1960, no. 3, issue 1, pp. 3-14. (Together with N. I. Simonov.)
44. On the course in the history of Russian mathematics. Abstracts of reports and communications at the interuniversity conference on the history of the physical and mathematical sciences, Moscow State University, 1960. (Together with I. B. Pogrebisky.)

45. Linear differential equations with variable coefficients. Publishing House of the Academy of Sciences of the UkrSSR, 1960, p. 76.
46. Russian-Ukrainian mathematical dictionary. Publishing House of the Academy of Sciences of the UkrSSR, 1960. (Editing.)
47. On operational calculus. *Ukr. Math. Journal*, 1960, vol. 12, no. 1, pp. 72–78.
48. **Mikhail Alekseevich Lavrentiev.** *Ukr. Math. Journal*, 1960, vol. 12, no. 4, pp. 490–491. (Together with Yu. A. Mitropolsky and P. F. Filchakov.)
49. Scientific activity of the institutions of the L. F. UkrSSR in 1954. *Bulletin of the Academy of Sciences of the UkrSSR*, 1955, No. 7, pp. 16–25. (Jointly with Ivasyuta M. K.).
50. On the book “Lenin and Modern Physics.” *Reports of the Academy of Sciences of the UkrSSR*, 1960, No. 1, pp. 1572–1575. (Jointly with Pyaskovsky B. V., Ravikovych S. L.).
51. Operational methods and their development in the theory of linear differential equations with variable coefficients. Publishing House of the Academy of Sciences of the UkrSSR, 1961, p. 126.
52. *Linear differential equations with variable coefficients.* Hindustan Publ. Corporation, Delhi, 1961.
53. On the book “The Development of Mechanics in Ukraine during the Years of Soviet Power” (Savin G. N., Georgievskaya V. V.). Publishing House of the Academy of Sciences of the UkrSSR, 1961, p. 283.
54. Important research in the field of the analytic theory of differential equations. *Bulletin of Kyiv University*, No. 4, issue 1, 1961, pp. 19–26.
55. On the problems of the history of mathematics in Russia and in the USSR and on works in this field. *Historical-Mathematical Studies*, issue 5, pp. 11–36. (Co-authored.)
56. History of mathematics. *UMZh*, No. 3, 1965, pp. 142–143. (Jointly with Bogolyubov A. N.).
57. *History of Russian Mathematics*, vol. I, Publishing House of the Academy of Sciences of the UkrSSR, 1966, p. 492. (Special scientific editing.)
58. Methodological questions in mathematics, in the book: *History of Russian Mathematics*, vol. I. (Introduction.) Publishing House of the Academy of Sciences of the UkrSSR, 1966, pp. 7–31. (Jointly with Bogolyubov A. N.)
59. *History of Russian Mathematics*, vol. II. Publishing House of the Academy of Sciences of the UkrSSR, 1967, p. 510. (Special scientific editing.)

60. The scientific activity of G. F. Voronoi, in the book: *History of Russian Mathematics*, vol. II. 1967. (Jointly with Pogrebissky I. B.).
61. *History of Russian Mathematics*, vols. III, IV (in two parts). Publishing House of the Academy of Sciences of the UkrSSR, 1967. (Special scientific editing.)
62. Theory of differential equations, chapter in the book *History of the Academy of Sciences of the UkrSSR*, vol. I. Publishing House of the Academy of Sciences of the UkrSSR, 1967. (Jointly with Sokolov Yu. D.).
63. Introduction to the chapter “Natural Sciences” in the book *History of the Academy of Sciences of the UkrSSR*, vol. I. Publishing House of the Academy of Sciences of the UkrSSR, 1967. (Jointly with Anisimov Yu. A.).

PUBLICATIONS ON THE WORKS OF I. Z. SHTOKALO, ON HIS SCIENTIFIC, PEDAGOGICAL, AND PUBLIC ACTIVITY

1. **Rakhmedin V.** Meeting of fellow countrymen. Newspaper *Radianska Ukraina*. Kyiv, 1950, June 3.
2. **Ingulsky P.** Thirty-five years have passed (in the land of the fathers). Newspaper *Vilna Ukraina*. 1950, June 4.
3. **Penkovsky M.** New Skomorokhy. Newspaper *Vilna Ukraina*. 1950, June 4.
4. **Yaichuk T.** The heart is filled with joy. Newspaper *Vilna Ukraina*. 1950, June 4.
5. Lviv scholars in the village of Skomorokhy. Newspaper *Lvovskaya Pravda*. 1950, June 4.
6. **Zaitsev P.** Two destinies. Newspaper *Lvovskaya Pravda*. 1950, June 4.
7. **Yashchenko A.** The path of a scholar. Journal *Radianskyi Lviv*. 1950, No. 12, pp. 30–47.
8. **Yashchenko A.** A scholarly patriot. Newspaper *Vilna Ukraina*, Lviv. 1951, February 3.
9. **Dolinsky S., Vasylenko S.** In collective-farm Skomorokhy. Newspaper *Lvovskaya Pravda*. 1953, July 1.
10. **Yashchenko A.** On reunited land. Lviv, 1954, p. 121.
11. **Tsyvin R.** Scholar, public figure. Newspaper *Vilna Ukraina*, 1955, February 8.

12. **Yashchenko A.** In the land of the fathers. *Journal Almanac, Year XXXVII*, 1955, No. 16.
13. **Pogrebissky I. B., Sokolov Yu. D.** Iosif Zakharievich Shtokalo. (On the sixtieth anniversary of his birth.) *UMZh*, 1958, vol. 10, No. 1, pp. 105–106.
14. **Mitropolsky Yu. A.** Iosif Zakharovich Shtokalo. (On the sixtieth anniversary of his birth.) *Bulletin of Kyiv University (Series of Mathematics and Mechanics)*, 1958, No. 1, pp. 3–8.
15. *Mathematics in the USSR over 40 Years (1917–1957)*. Fizmatgiz, Moscow, 1959, vol. I, pp. 521, 978; vol. II, pp. 784–785.
16. **Mitropolsky Yu. A.** Shtokalo I. Z. Linear differential equations with variable coefficients. *UMZh*, 1960, vol. 12, No. 4, pp. 391–401.
17. **Mitropolsky Yu. A., Parasyuk O. S., Sokolov Yu. D.** Shtokalo I. Z. Operational methods and their development in the theory of linear differential equations with variable coefficients. *UMZh*, 1961, vol. 13, No. 3, pp. 116–117.
18. Erugin N. P. *Linear systems of ordinary differential equations*. Minsk, 1963, pp. 121–141.
19. *Ukrainian Mathematical Bibliography*. Publishing House of the Academy of Sciences of the Ukrainian SSR, Kyiv, 1963, pp. 373–375.
20. Bellman R. Collection of translations. *Mathematics*, 1964, vol. 8, No. 5, p. 158.
21. *Ukrainian Soviet Encyclopedia*, 1964, vol. 16. Shtokalo I. Z.
22. *Who's Who in the USSR 1961/1962: Publ. by International book, 1962. A biographical dictionary of personalities in the Soviet Union, compiled by the Institute for the Study of the USSR*, Munich, Germany, pp. 695–696.
23. *History of the Academy of Sciences of the Ukrainian SSR*. Shtokalo I. Z., vol. II, 1967.

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