

Information about the Izhevsk Seminar

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Date: 1965-01-01T00:00:00+00:00

Abstract

Full Text

Preamble

**DIFFERENTIAL EQUATIONS DECEMBER 1965, VOLUME I,
NO. 12 CHRONICLE AND INFORMATION**

Regarding the Izhevsk Seminar

In the spring of 1954, a research seminar was established within the Department of Mathematics at the Izhevsk Mechanical Institute under the leadership of N. V. Azbelev. The seminar was initially dedicated to theorems concerning integral and differential inequalities, specifically focusing on the Urysohn–Chaplygin theorems. Early works by seminar members examined the conditions for applying the theorem of differential inequalities to various types of ordinary differential equations, partial differential equations, and finite difference equations.

By the autumn of 1955, the departmental seminar was reorganized into a city-wide forum. Most researchers from the mathematics departments of various higher education institutions in Izhevsk participated in the seminar's research activities. The most comprehensive presentation of the results achieved between 1955 and 1960 can be found in several dissertations [?, ?, ?, ?, ?]. These works were devoted to a deeper study of the conditions for applying theorems on integral and differential inequalities and the construction of estimates derived from these theorems.

Starting in 1960, much of the research conducted by seminar members shifted toward studying the existence, uniqueness, and asymptotic behavior of solutions to differential and integral equations based on integral and differential inequalities [?, ?, ?, ?]. In the recent works of the participants, these inequalities have found broad application in the study of boundary value problems [?, ?, ?, ?, ?, ?, ?] and the development of approximate methods [?, ?, ?, ?, ?].

Currently, the Izhevsk seminar maintains close scientific ties with mathematicians in various cities across the Soviet Union, including Moscow, Leningrad, Kazan, Voronezh, Perm, Mogilev, and Makhachkala. Below is a list of dissertations defended by seminar participants and their primary publications on these topics.

List of Dissertations and Major Publications

1. Z. B. Tsalyuk. *On the conditions for the solvability of the Chaplygin problem*, Candidate's dissertation, Kazan University, 1958.
2. A. L. Teptin. *On the conditions for the solvability of the Chaplygin problem for difference equations*, Candidate's dissertation, Kazan University, 1961.
3. E. S. Chichkin. *Differential inequalities for multi-point boundary value problems*, Candidate's dissertation, Ural University, 1961.
4. G. A. Teterev. *Positive invertibility of operations and monotonic approximations*, Candidate's dissertation, Kazan University, 1962.
5. N. V. Azbelev. *On the Chaplygin problem*, Doctoral dissertation, Kazan University, 1962.
6. R. K. Rakhmatullina. *Application of integral inequalities to the study of the stability of solutions to differential equations*, Candidate's dissertation, Kazan University, 1963.
7. A. I. Logunov. *Integral inequalities with a lagging argument*, Candidate's dissertation, Voronezh University, 1963.
8. N. V. Azbelev and Z. B. Tsalyuk. *On the question of the uniqueness of the solution to an integral equation*. DAN SSSR, 156, No. 2, 1964.
9. *Proceedings of the Izhevsk Mathematical Seminar*, Issue 1, 1963.
10. N. V. Azbelev, A. Ya. Khokhryakov, and Z. B. Tsalyuk. *Theorems on differential inequality for boundary value problems*. Matem. Sb., 59, 1962.
11. S. A. Pak. *On the question of differential inequalities for boundary value problems*, Candidate's dissertation, Voronezh University, 1963.
12. A. L. Teptin. *Theorems on difference inequalities for n -point difference boundary value problems*. Matem. Sb., 62, No. 3, 1963.
13. A. L. Teptin and N. N. Yuberev. *Theorems on the behavior of the Green's function for a finite-difference analogue of the Sturm-Liouville boundary value problem and their application to the study of differential equations*. Siberian Math. Journal, 5, No. 5, 1964.
14. S. A. Pak. *On a sequence converging to the solution of a system of ordinary differential equations*. Siberian Math. Journal, 3, No. 4, 1962.
15. N. V. Azbelev, I. M. Smolin, and Z. B. Tsalyuk. *On an approximate method for constructing the Cauchy function*. DAN SSSR, 135, No. 3, 1960.
16. A. Ya. Khokhryakov. *On the question of a periodic boundary value problem for a third-order differential equation*. Matem. Sb., 63, No. 4, 1964.
17. R. G. Aliev. *On a multi-point boundary value problem for a fourth-order ordinary differential equation*, Candidate's dissertation, Kazan University, 1963.

18. A. I. Logunov and Z. B. Tsalyuk. *On the question of the uniqueness of solutions to Volterra integral equations with a lagging argument*. DAN SSSR, 160, No. 5, 1965.
19. Yu. V. Komlenko. *Theorems on the “fork” and some of their applications*, Candidate’ s dissertation, Academy of Sciences of the Kirghiz SSR, 1965.
20. N. V. Kasatkina. *On multidimensional Volterra integral equations*, Candidate’ s dissertation, Academy of Sciences of the Kirghiz SSR, 1965.

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Note: Figure translations are in progress. See original paper for figures.

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