

Nurbek Kakharman

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ACADEMIC POSITIONS

- **Institute of Mathematics and Mathematical Modeling**
 - **2024** - Leading Researcher
 - **2023 - 2024** Senior Researcher
 - **2019 - 2021** Junior Researcher
 - **2017 - 2019** Research Assistant
- **Al-Farabi Kazakh National University, Faculty of Mechanics and Mathematics**
 - **2022 - 2023** Teacher
 - **2016 - 2017** Teaching Assistant
- **SDU University, Faculty of Engineering and Natural Sciences**
 - **2024 - 2025** Senior Lecturer - (Department of Mathematics and Natural Sciences)
 - **2025** - Assistant Professor SDU - (Department of Mathematics and Natural Sciences)

SCHOOLS AND DEGREES

PhD in Math (2023)
2017-2020 Joint PhD program for the preparing of scientific researchers between
Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan
and **Al-Farabi KazNU**, Almaty, Kazakhstan
Supervisors: Prof. Tynysbek Kalmenov and Prof. Pier Domenico Lamberti

Master in Math (2014-2016)
Al-Farabi KazNU, Almaty, Kazakhstan
Supervisor: Prof. Serikzhan Badaev

Bachelor in Math (2010-2014)
Al-Farabi KazNU, Almaty, Kazakhstan
Supervisor: associate Prof. Pernebek Dosanbay

Graduate in 2010
**Republican Specialised Physics and Mathematics Boarding School named
after O. Zhautykov** (2006-2010), Almaty, Kazakhstan

PUBLICATIONS IN SCIENTIFIC JOURNALS (ARTICLES)

1. A Modified Cauchy Problem With Nonlocal Boundary Condition for a Degenerate Hyperbolic Equation, **Mathematical Methods in the Applied Sciences**. (Q1), (2025) (with Kal'menov T.).
2. Growth properties of Hartley transform via moduli of continuity, **Journal of Pseudo-Differential Operators and Applications** (Q2) 15.4 (2024): 69. (with N. Tokmagambetov).

3. An overdetermined problem for elliptic equations, **AIMS Mathematics** (Q1), (2024) 9(8), 20627-20640. (with Kal'menov T.).
4. Rayleigh–Faber–Krahn and Hong–Krahn–Szegő-type inequalities for the absolute value of the heat operator, **Complex Variables and Elliptic Equations** (Q2), (2024). (Article in Press) (with Tulenov K.).
5. The Mixed Initial-Boundary Value Problem for Degenerate Hyperbolic Equation **Trends in Mathematics** 2024, 1, pp. 145–150
6. On one-dimensional Helmholtz equation. **Journal of Mathematics, Mechanics and Computer Science** 118.2 (2023): 21-29.
7. Mixed Cauchy problem with lateral boundary condition for noncharacteristic degenerate hyperbolic equations. **Boundary Value Problems** (Q1), 1 (2022): 1-11. (with Kal'menov T.).
8. Solution estimates for one class of elliptic and parabolic nonlinear equations. **Complex Variables and Elliptic Equations** (Q2), (2022): 1-10. (with Otelbaev M.).
9. On hyponormal and dissipative correct extensions and restrictions. **Mathematical Methods in the Applied Sciences** (Q1), 2022, 45(16), pp. 9049–9060. (with Tulenov K. and Zhumanova L.).
10. Two theorems on estimates for solutions of one class of nonlinear equations in a finite-dimensional space. **Bulletin of the Karaganda University-Mathematics** (2022). DOI: 10.31489/2022M3/70-84 (with Koshanov B. D., Segizbayeva R. U. and Sultangaziyeva Zh. B.).
11. Sadybekov M.A., About root functions of periodic Sturm-Liouville problem. **Kazakh Mathematical Journal** (2019), V. 19:1, pp. 31-38; (with Kal'menov T., and Sadybekov M.A.).
12. On the completeness of root vectors of regular boundary value problems for one-dimensional differential operators. **Kazakh Mathematical Journal** (2020), V.20:2. 73-84. (with Kal'menov T.).

H-INDEX
(02.07.2024)

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- Scopus ID: 57571444600
H-index 2
- Researcher ID Web of Science: CAF-6060-2022
H-index 2

ADVANCED
COURSES,
CONFERENCES,
AND WORKSHOPS

- 9th European Congress of Mathematics (9ECM), July 15-19, 2024. Seville, Spain. (awarded full travel grant).
- School on Interactions between Dynamical Systems and Partial Differential Equations (JISD), July 8-12, 2024. CRM, Barcelona, Spain.
- Barcelona Analysis Conference, June 3-7, 2024. Barcelona, Spain. (awarded registration grant).
- Spring School and Workshop "Spectral Theory, Fourier Analysis and PDEs", May 27-31, 2024. Bilbao, Spain.

- Harmonic Measure and Free Boundary Problems, BGSMAH Graduate Course, November 7, 2023 - December 21, 2023. UB, Barcelona, Spain.
- Mini-courses in Mathematical Analysis, June 2019, Padua, Italy.
- XII International Conference of the Georgian Mathematical Union (GMU), September 2022. Batumi, Georgia.
Talk title: Initial Boundary Value Problem for Noncharacteristic Degenerate Hyperbolic Equations;
- International Conference on Analysis and Applied Mathematics (ICAAM 2022), October 31 - November 6, 2022. Antalya, Turkey.
Talk title: A criterion for minimality of the Laplace operator;
- Methusalem Workshop on Classical Analysis and PDEs, February 2023. Ghent, Belgium.
Talk title: On Regular Boundary Value Problems for Degenerate Hyperbolic Equations.

INTERNSHIPS

- University of Padua, Department of Mathematics, Padua, Italy. April 2019 – July 2019.
- **Bolashak International Scholarship:** The Centre de Recerca Matemàtica (CRM), Barcelona, Spain. September 2023 - September 2024.

GRANTS

- Grant for young scientists "Zhas Galym" from the Ministry of Education and Science of the Republic of Kazakhstan **2022-2024**, Grant No. AP14971679; (Supervisor: N. Kakharman);
- Competition for grant funding of young scientists for scientific and (or) scientific and technical projects for **2024-2026** (Ministry of Science and Higher Education of the Republic of Kazakhstan) Grant No. AP22785364 (Supervisor: N. Kakharman).

AWARDS

- "III World of Al-Farabi" for students and young scientists in the international scientific conference, 2nd degree diploma (2016);
- "World of Science" for students and young scientists in the international scientific conference, 3rd-degree diploma (2014);
- Semifinal ACM International Collegiate Programming Contest 2012, Certificate, Tashkent, Uzbekistan.
- Faculty of Mechanics and Mathematics Olympiad, 1st-degree diploma (2012);
- 6th International Zhavykov Olympiad on Mathematics 2010, Bronze medal, Almaty, Kazakhstan;
- The Republican Olympiad competition for students in mathematics, 3rd-degree diploma, 2010, Kyzylorda, Kazakhstan.

MATHEMATICS JURY AND COMPETITION COACHING

- **Jury**
 - The Republican Olympiad Competition for Students in Mathematics: 2012-2017
 - The Asian-Pacific Mathematical Olympiad (APMO) and the Mathematical Olympiad "Silk Road": 2010-2019
 - International Zhautykov Olympiad: 2012-2020
 - Euler Olympiad: 2013-2015
 - ★ International Olympiad among Military Cadets in Mathematics, Military Institute of the Kazakh Ground Forces: 2016-2017

– **Mathematics Competition Coach**

- COP Al-Farabi: Prepared students for mathematics competitions, 2013-2017
- "Geometry Training Camps" for Kazakh-Turkish High School team (team leader: Radmir Sultanmuratov), SDU, Kaskelen: August 2016