ANNUAL REPORT OF 2025 ON SCIENTIFIC AND SCIENTIFIC ORGANIZATIONAL ACTIVITY OF THE DEPARTMENT OF "FUNCTIONAL ANALYSIS" OF INSTITUTE OF MATHEMATICS AND MECHANICS OF MINISTRY OF SCIENCE AND EDUCATION OF THE REPUBLIC OF AZERBAIJAN

The staff of "Functional Analysis" department consists of 20 employees including 22 research associates. 10 of them doctor of sciences, professor.

1.Aslanov Hamidulla I. doct. ph.m.s.,prof.
2.Mammed Bayramoglu. doct. ph.m.s.,prof.sen.r.a.
3.Aliyev Soltan A. doct. ph.m.s.,prof.sen.r.a.
4.Mirzoyev Sabir S. doct. ph.m.s.,prof.sen.r.a.
5.Kurbanov Veli M. doct. ph.m.s.,prof.sen.r.a.
6.Nabiyev Ibrahim M. doct. ph.m.s.,prof.sen.r.a.
7.Aliyev Araz R. doct. ph.m.s.,prof.sen.r.a.
8.Eyvazov Elsad H. doct. ph.m.s.,ass.prof. sen.r.a.
9.Mustafayev Heybətkulu S. doct. ph.m.s.,prof.sen.r.a.
10.Aslanova Nigar M. doct. ph.m.s.,prof. sen.r.a.
11.Mukhtarov Fekhreddin Sh. c.ph.m.s.,lead.r.a.
12.Jabrailova Afet N. c.ph.m.s.,lead.r.a.
13.Latifova Aygun R. phd in math.,chief.r.a.
14.Khalilov Vuqar S. c.ph.m.s.,lead.r.a.
15.İbadova İrada A. c.ph.m.s.,lead.r.a.
16.Guliyev Namiq I. c.ph.m.s.,r.a.
17.Vahabov Nazim G. chief.r.a.
18.Alimardanova Kamilla A. c.ph.m.s.,chief. r.a.
19.Osmanli Jalala A. phd in math.,chief. r.a.
20.Safarova Aynur N. phd in math.,chief. r.a.
21.Iskenderli Guller Z.sen.lab.ass.
22.Bayramova Aygun F.sen.lab.ass.

I. SCIENTIFIC SECTION.

In 2025, the department is conducting 18 projects on the approved topics **"Spectral analysis of differential operators"** and **"Investigation of some issues of probability theory."**

1) "Multiple completeness of the system of generalized eigenvalues and associated elements of some non-self-adjoint operators of elliptic type in an unbounded domain." Ex. doct.ph.m.s., prof. H.I.Aslanov.

In the reporting year, second-order elliptic operators in unbounded domains with smooth boundaries were considered. The operator's potential, along with the coefficients of the first-order derivatives involved in the equation under consideration, is a complex-valued function. The discreteness of the spectrum of operators of this type was proven, the domain in which the spectrum lies on the complex plane was determined, and a theorem on the multiple completeness of the system of eigenfunctions and associated functions of the corresponding operator was proved.
The following articles were submitted for publication.

1.Investiqation of resolvent of operator generated by differential expressions with operator coefficients in Hilbert space.

Trans.Nath.Sci.Azerb.Ser.Phis.Tech.Math.Sci.Mathematics.

2.Completeness of the sistem of eigen and associated vectors of operators cenerated by partial operator-diferential expressions in Hilbert space.Procceding of the Mathematics and Mechanics.Nath.Acad.Sci .of Azerbaijan.

Thesis

1. H.İ.Aslanov., G.M.Eyvazlı. Investigation of resolvent of operator generated by differential expressions with operator coefficients in Hilbert space. Modern problems of Mathematics and Mechanics,03-06 september 2025 ,Baku, pp.139-142

2)"Root vector functions of a second-order differential operator with matrix coefficients." Ex:doct.ph.m.s., prof. sen.re.a. V.M.Kurbanov.

Articles

1) V.M.Kurbanov, A.I. Ismailova, Kh.R. Gojayeva //On Convergence of Spectral Expansion in Eigenfunctions of Dirac Operator// Azerbaijan Journal of Mathematics V. 15, No 1, pp.116-127. 2025, January, (ISSN 2218 6816, https://doi.org/10.59849/2218- 6816.2025.1.116), Web of Scines, Scopus, Q2.
2) Kurbanov V.M., Gojayeva Kh.R. Riesz property criterion for the system of eigen and associated functions of second order ordinary differential operator. //

Trans. Natl. Acad. Sci. Azerb. Ser. Phys.-Tech. Math. Sci. Mathematics, 45 (4), 123-131 (2025). https://doi.org/10.30546/2617-7900.45.4.2025.0131 , Web of Scines, Scopus, Q3.

Theses

1) В.М. Курбанов, Х.Р. Годжаева. Влияние модуля непрерывности главного коэффициента на скорость сходимости разложений по корневым функциям оператора чётного порядка. Материалы Международной конференции Воронежская весенняя математическая школа. г.Воронеж (3-9 мая), 2025, Понтрягинские чтения-XXXVI,стр.193-196

2) В.М. Курбанов, Л.З. Буксаева. Абсолютная и равномерная сходимость спектрального разложения по корневым вектор – функциям разрывного оператора Дирака. Материалы Международной конференции Воронежская весенняя математическая школа. г.Воронеж (3-9 мая), 2025, Понтрягинские чтения- XXXVI.стр.191-193.

3) Kurbanov V.M., Gojayeva Kh. R. Influence of the Module of Continuity of the Coefficient on the Rate of Convergence of Expansions in Root Functions of the Second Order Ordinary Differential Operator. // Modern Problems of Mathematics and Mechanics of the XII International Scientific Conference. Baku-2025, pp.154-157.

3)"Boundary value problems for a class of multivalued elliptic operator differential equations." Ex: doct.ph.m.s.,prof. sen.re.a. S.S.Mirzoyev.

In the reporting year, the solvability conditions of boundary value problems for fourth-order special and ordinary derivative elliptic equations in Hilbert spaces have been studied. The existence and uniqueness conditions for the solutions of some boundary value problems for third-order quasi-elliptic operator-differential equations have also been investigated. In addition, Poincaré- and Friedrichs-type inequalities have been established in Banach functional spaces defined by certain types of shift operators, as well as in some non-classical spaces.

Articles

1)On some boundary problem for operator-differential equation of the fourth order operator equations. (Baku Mathematical Journal (to applier)).

2)On Poincare and Fredrics Inequelts, Confoliton operators and Riesz Potential in one class for Non classical spaces (Transaction of NASA, to applier).

3)On one class of Banach function space depended shift operator (Azerbaijan Journal of Mathematics, to applier).

4)О разрешимости одной краевой задачи для операторно-дифференциальных уравнений четвертого пордяка. /Proceeding of the International Conference. Tajikistan, Duşanbe (applier).

5)О разрешимости некоторых краевых задач для квазилинейных уравнений третьего порядка вгильбертовом пространстве. (A.D. Juraev Institute of Mathematics of the National Academy of Tajikistan, Duşanbe)(to applier).

4) "Spectral properties of the Dirac operator with a spectral parameter in boundary conditions." Ex: doct.ph.m.s., prof. sen.re.a. I.M.Nabiyev.

In 2025, the spectral properties of a Dirac system with non-separated boundary conditions were studied. One of the boundary conditions includes a linear function of the spectral parameter. A condition for the reality of the spectrum was obtained, and proposals were made regarding the multiplicity, ordering, and asymptotics of the eigenvalues. In addition, the representation of the characteristic function in the form of an infinite product in terms of the eigenvalues was obtained, and it was proven that the operator under consideration has no associated (generalized) eigenfunctions.

Article

1. I.M. Nabiev, L.I. Mammadova, G.S. Mammedzadeh. Spectral problems for Sturm-Liouville operator with non-separated boundary condition linearly dependent on the eigenparameter // Proceedings of the Institute of Mathematics and Mechanics, National Academy of Sciences of Azerbaijan, 2025, 51(1).p.99-106. (WOS Q2, SCOPUS Q2) https://doi.org/10.30546/2409-4994.2025.51.1.1021

Theses

1. I.M. Nabiev, L.I. Mammadova. On the uniqueness of the solution of an inverse problem for diffusion operator with boundary condition dependent on the eigenparameter / 4 th International Conference on Trends in Advanced Research ICTAR, July 04-05, 2025, Konya, Turkey Abstract Book, p. 22. https://as-proceeding.com/index.php/ictar/home

2. I.M. Nabiev, L.I. Mammadova. Some spectral properties of a boundary value problem with a boundary condition depending on a parameter / Abstracts of the XII Int. conf. “Modern Problems of Mathematics and Mechanics”, September 03-06, 2025, Baku/ Azerbaijan, p. 167-169.

https://mpmm.imm.az/pages/abstracts

3. I.M. Nabiev, L.I. Mammadova, G.G. Taghiyeva. Spectral problems for the Dirac operator with non-separated boundary condition linearly dependent on the spectral parameter / 2nd International Conference on Modern and Advanced Research ICMAR January 15-16, 2025, Konya, Turkey Abstract Book, p. 86.

https://as-proceeding.com/index.php/icmar/home

5) “Asymptotics of the eigenvalues of the magnetic Schrödinger operator corresponding to the Neumann problem.” Ex: doct.ph.m.s., prof. sen.re.a. A.R.Aliyev, doct.ph.m.s., prof. sen.re.a. E. H. Eyvazov

Articles

1. Khalilov E.H., Aliev A.R., Musayev A.M. Investigation of the approximate solution of one class of curvilinear integral equations by the projection method // Ukrainian Mathematical Journal, 2025, vol. 76, no. 10, p.p. 1738–1762. (**Web of Science Core Collection, SCIE - Q3**; **Scopus - Q3**)
https://link.springer.com/article/10.1007/s11253-025-02420-4

2. Aliev A.R., Ismayilova N.T., Ismayilov E.A. Use of machine learning methods for analysis of factors affecting ICT contribution to different countries development // Lecture Notes in Networks and Systems, 2025, vol. 1142, p.p. 253-259. (**Scopus - Q4**)
https://link.springer.com/chapter/10.1007/978-3-031-72506-7_34

3. Aliev A.R., Aliyev T.A., Eyniyev R. Use of machine learning methods for analysis of factors affecting ICT contribution to different countries development // International Journal of Information Technology and Computer Science (IJITCS), 2025, vol. 17, no. 3, p.p. 26-51. (**Scopus - Q3**)
https://www.mecs-press.org/ijitcs/ijitcs-v17-n3/v17n3-3.html

4. Aliev A.R., Nabiev A.A., Gasimova G.M. On the quadratic pencil of the Sturm-Liouville equation on the half line // Advanced Mathematical Models & Applications, 2025, vol. 10, no. 3 (çapdadır). (**Scopus – Q2**)
https://jomardpublishing.com/journals/advanced-mathematical-models-applications/current-issue

5. Aliev A.R., Eyvazov E.H. The variation of eigenvalues of the two-dimensional magnetic Schrödinger operator with respect to the angle of a flat sector // Turkish

Journal of Mathematics, 2025, vol. 49, no. 6 (çapdadır). (**Web of Science Core Collection, SCIE - Q2**; **Scopus - Q2**)
https://journals.tubitak.gov.tr/math/

Thesis

1. Aliev A.R., Eyvazov., Properties of Eigenfunctions of One Non-Self-Adjoint Operator, Of the xii International Scientific Conference "Modern problems of mathematics and mechanics", 127-129pp. September 03-06, 2025, Baku, Azerbaijan

6) "Investigation of the ergodic properties of Birhoff means of two probable estimates in local compact groups." Ex. : doct. ph.m.s., prof.sen.r.a. H.S. Mustafayev

Articles

1. Representations of abelian semigroups and Helson set, Semigroup Forum, 110(2025), p.344-356 (Q2) (SCOPUS and WOS).

2. Power bounded operators on Hilbert space and Helson set, Proceeding of the Institute Mathematics and Mechanics, 51(2025), p.59-65. (Q2) (SCOPUS).

3. Invariant subspace of -semigroup of contractions on Hilbert space, Mediterranean J. of Mathematics, 22(2025), Article №60, 11p. (Q2) (SCOPUS and WOS).

7) "Study of the spectrum of operator realizations of the Sturm-Liouville operator equation by exiting the space."Ex: doct.ph.m.s., ass.prof. sen.re.a. M. Bayramoglu. doct.ph.m.s., ass.prof. sen.re.a. N.M. Aslanova.

Articles

1. M. Bayramoglu ∗ I. Jabbarov A. Zeynalov M. Ismailova. On the structure of tensor fields given on manifolds. Jourmal of Contemprary Applied Mathematics. 15 (1), 160- 174, 2025(scopus)
https://www.scopus.com/pages/publications/105007042499?origin=resultslist

2. M . Bayramoglu, A.M.Bayramov, Seda Kızılbudak. "On Asymptotics of the Sum of the Fourth Power of the Negative Eigenvalues of the Singular Sturm-

Liouville Operator. Mathematical Methods in Applied Sciences. 2025, pp.1-6 (WOS)
https://www.webofscience.com/wos/woscc/full-record/WOS:001571815400001

3. Aslanova, N., Avey, M., Sofiyev, A. Modeling and solution of the buckling problem of axially loaded laminated nanocomposite truncated conical shells in thermal environments. ZAMM Zeitschrift fur Angewandte Mathematik und Mechanik, 2025, 105(2), p.1-25.e202401190 (scopus ., wos)
https://doi.org/10.1002/zamm.202401190

4. Aslanova, N.M. Sofiyev, A.H., Avey, M., A Mathematical Approach to the Buckling Problem of Axially Loaded Laminated Nanocomposite Cylindrical Shells in Various Environments. Mathematical and Computational Applications, 2025, 30(1), 10,p. 1-21.(scoups.,wos) https://doi.org/10.3390/mca30010010

5. Aslanova, N., Tahirova, A., Aslanov, K On one identity between characteristic determinant and norming constants and its application to traces, II .Filomat, 2025, 39(12), pp. 4059–4077(scoups.)

6. Aslanova, N., Aslanov, K. On One Identity for Norming Constants and Its Application to Proof of Formula for Regularized Trace. Mathematical Methods in the Applied Sciences,p.1-8,feb. 2025(scoups.,wos)

7. Aslanova, N., Aslanov, K. On some spectral problems for higher order differential operator equation, I Filomat, 2025, 39(6), pp. 1895–1908(scoups_.,wos)

8. Aslanova, N., Aslanov, K., Kocinac, L. On Some Spectral Problems for Sturm–Liouville Equation With Operator Coefficients. Mathematical Methods in the Applied Sciences, p.1-8 .march.2025 (scoups., wos)

8) “Orthogonality of eigenvectors of a class of operators in Hilbert space.”

Ex: cand.ph.m.s., ass.prof. lead r.a. A.R.Jabrailova

This year, the spectral properties of a class of completely continuous operators in Hilbert space were studied, and the properties of the eigenvectors of this class of operators were investigated. Conditions ensuring the orthogonality of the eigenvectors of a completely continuous operator were found.

Article

1.Джабарзаде Р.М. Джабраилова А.Н. Спектральные свойства вполне непрерывных операторов в сепарабельном гильбертовом пространстве.»The scientific heritage»,2025,№155(155),стр.70-72 (eLibrary).

9) "Study of Sturm-Liouville equations defined by boundary conditions and transition conditions." Ex:c.ph.m.s.,chief. r.a. F. Sh. Mukhtarov.

In 2025, a boundary value problem consisting of Sturm-Liouville equations defined on more than one interval, boundary conditions, and transition conditions defined at points between intervals was studied. Many theoretical results were obtained.

Theses

1. Fahreddin Muhtarov., Oktay Sh. Mukhtarov., Kadriye Aydemir "The Shturm-Liouville Differential class Defined on two distinct intervals" "Uluslararası Avrasya Bilimsel Araşdirmalar və İNOVASYON KONGRES 27-28 İyul 2025 səh.170-176

2. Fahreddin Muhtarov., Oktay Sh. Mukhtarov., Kadriye Aydemir "Mathematik fizikte ortaya çıkan periyodik Şturm-Liouville problemləri için Rayleigh oranı" "Latin Amerika 11-th International Conference on Scientific Researches" adlı beynəlxalq konfransın materialları, 3-5 oktyabr 2025. Rio de Janerio.pp.203-210

3.Fahreddin Muhtarov., Oktay Sh. Mukhtarov., Kadriye Aydemir. "Some qualitative properties of two -interval singular boundary-value problems."5nd International Turkish World Engineering and Science Congress, december 4-7,2025,Turkiye.

10) "Some inverse problems for two spectra for Sturm-Liouville operators with a spectral parameter in boundary conditions."
Ex:phd in math.,chief.r.a. N.C. Guliyev.

Article

1.Guliyev N.J. Spectral identities for Schrödinger operators. Canadian Mathematical Bulletin, 68 (2025), no. 2, 484–491.

https://www.cambridge.org/core/journals/canadian-mathematical-bulletin/article/spectral-identities-for-schrodinger

11) "Direct and inverse scattering problems for a system of ordinary differential equations on a half-axis." Ex:sen.res.ass. K.I. Alimardanova.

In the reporting year, the direct and inverse scattering problems in a half-axis for a first-order linear hyperbolic system of equations arising from an n–3 incoming wave were studied. The direct scattering problem is reduced to a system of integral equations, and a theorem on the existence and uniqueness of its solution is proven. To study the inverse problem, based on the given scattering operator on the half-axis, a scattering operator defined on the whole axis is constructed by means of the factorization properties of its elements and their combinations. Using this operator, the coefficients of the system are determined.

Thesis

1. 1.K.A.Alimardanova ,A.N.Safarova .The scattering problem for the system of first order linear hyperbolic equations on semi-axis in case of(n-3) incident waves ,Modern problems of Mathematics and Mechanics,03-06 september 2025 ,Baku, pp. 129-132

12) "Spectral analysis of the Schrödinger operator with a perturbed potential." Performed by: Ex: phd in math.,chief. r.a. A.R. Latifova.

During the reporting period, the direct and inverse problems for a class of Sturm-Liouville problems were studied. The inverse problem of scattering for Sturm-Liouville operators with truncated coefficients was investigated. Algorithms for coefficient recovery were investigated. The results were prepared in the form of an article.

13) "Numerical rank in the sense of Hausdorff and the Lak-Milgram theorem." Performed by: Ex: phd in math., chief. r.a. N.G. Vahabov.

In the reporting year, the structure of the numerical domain of some classes of operators was studied and their spectrum was investigated.

A theorem on the structure of the spectrum of Norm-Hermit type operators was proved and a Taylor-Holdberg diagram was constructed based on the result. New effective proofs of the Stone-Teplitz theorems were given by applying the Lax-Milgram theorem.

New operators associated with sets in Banach space were constructed and their properties were studied. The spectral properties of adjoint Abel type operators were studied.

14) "The inverse problem of spectral analysis for a system of one class of Dirac equations with discontinuous coefficients on a finite interval." Ex: phd in math., chief. r.a. J. A. Osmanli.

During the current period, the initial conditions and data necessary for the correct formulation of the inverse problem were investigated; and the existence and uniqueness of solutions to the problem were studied.

15) "The inverse scattering problem on a half-axis for a system of first-order hyperbolic equations in the case of two incident waves." Ex: phd in math., chief. r.a. A.N. Safarova.

During the current period, the direct scattering problem on a half-axis for a system of first-order hyperbolic equations in the case of two incident waves and in the case of scattered waves was studied; the scattering operator was determined, and integral representations of the solution were recorded.

Article

1. Azizbayov E.I.,Safarova A.N .An inverse problem for a parabolic equation with nonlocal boundary and two -point overdetermination conditions, European Journal of Pure and Applied Mathematics Web of Science – ESCI ,Scopus),2025,Vol.18, No4, pp.1-19.

Thesis

1.K.A.Alimardanova ,A.N.Safarova .The scattering problem for the system of first order linear hyperbolic equations on semi-axis in case of(n-3) incident waves ,Modern problems of Mathematics and Mechanics,03-06 september 2025 ,Baku, pp. 129-132

Topic: Investigation of some issues of probability theory.

16) "Some boundary problems for branching discontinuous stochastic processes." Ex:doct.ph.m.s., prof. sen.re.a. S.A. Aliyev.

In the reporting year, age-dependent multi-type emigration-branching stochastic processes were studied, their probability characteristics were investigated, and limit theorems were obtained.

Article

1.Aliev S.A. Limit theorems for age-dependent branching process with emiqration.,

Материалы IV Int.konf. "Modern challenges and achievements in

information and communication technogies- 2025" Batumi, 2025, 6 стр.

Theses

1.Aliev S.A. Convergence of sequence of Bellman-Harris processes to continuous state space branching process., AR Biznes Universiteti, Beynəlxalq elmi-praktiki konfransın materialları, 2024, s.213.

2. S.A.Aliev. F.H.Rahimov. I.A.Ibadova .On the limit theorems for the family first passage time of first order avtoregressive process with random coefficient, Int. scientific-practical conf.,Tbilisi, 2024, p.70-72

3.S .A.Aliev. F.H.Rahimov I.A.Ibadova. V.S.Xalilov .On the boundary problems for perturbed Markov random walk described by the autoregressive process., Int.conf., "Actual problems of algebra, analysis, topology and computational mathem." Tashkent, 2025, p.185-187.

4. S .A.Aliev. I.A.Ibadova Existence of limit distribution for semi-markov process in a scheme of series., XII Int. conf. "Modern problems of Mathem. and Mechanics,

Abstracts, 2025, p.132-134.

5. S.A.Aliev.Convergence to the continuous state space branching processes., XL Int.conf. PDMU-2025, Poland, 2025.,p.15

17) "Investigation of boundary value problems for Markov random walks described by a first-order autoregressive process." Ex: cand.ph.m.s., ass prof. lead r.a. V. S. Khalilov

Limit theorems for a class of Markov random entanglements described by a single-order autoregressive process have been studied. The law of large numbers, the strengthened law of large numbers, and the central limit theorem have been proved for Markov random entanglements described by the sum of values of a single-order autoregressive process with random coefficients. The results obtained have been published.

1. F.C. Rahimov, V.S. Khalilov, U.F. Mammadova. Limit theorems for Markov random walk described by sums of Values of first-order auto regressive processes with random coefficient. Proceedings of IAM. v.14, N1, 2025 pp.69-74.

2.Rahimov F.H., Aliyev S.A., Ibadova I.A., Xalilov V.S. On the boundary problems for perturbed Markov random walk described by the autoreqressive process. Of the international scientific conference 30-31 may 2025, Tashkent International University of financial management technologies. p.185-187.

3. Rahil Amanov, Vugar Khalilov, Narmin Amanova. On solvability of arbitrary order quasilinear elliptic systems. bulletin of the İnstitute of Mathematics-2025, vol.8, No4, pp- 9-22.İSSN-2181-9483

4. Rahil A.Amanov, Vugar S. Xalilov, Narmin R. Amanova. Existence of strong solutions to semi linear elliptic systems of second order. Kazakh Mathematical Journal İSSN2413-6468, 25:3(2025) 39-59.

18)"Boundary value problems for Markov random walks described by a first-order autoregressive process with random coefficients." Ex: cand.ph.m.s., lead.r.a. İ.A.İbadova

1.S.A.Aliyev,F.H.Rahimov I.A.Ibadova On a family of first passage times for the level of perturbed Markov random walk described by the autoregressive process Turkish Journal of Mathematics (article was submitted for publication.)

Theses

1. S.A.Aliyev,F.H.Rahimov I.A.Ibadova. On the limit theorems for the family first passege time of first order autoregressive procces with random coefficient International Scientific-Practical Conference Modern Challenges and Achievements infarmation and Communication Technologies-novenber1-2, 2024 Tbilisi, Georgia pp.70-72 .

2. F.H.Rahimov, S.A.Aliyev, I.A.Ibadova, Xalilov V .S On the boundary problems for pertured Markov random walk described by the autoregressive process. International Scientific Conference "Actual Problems of Algebra, Analysis, Topology and Computational Mathematics" May 30-31, 2025 Tashkent, Uzbekistan.pp.185-186.

https://www.researchgate.net/publicatijn/392326566_On_the_application_of_ill-posed_problems_in_science_and_technology

3. S.A. Aliyev, I.A. Ibadova . Existence of limit distribution for Semi-Markov process in a scheme of series. XII International Scientific Conference "Modern Problems of Mathematics and Mechanics" on September 03-06, 2025 in Baku, pp. 136-138, AZERBAIJAN. https://mpmm.imm.az/abstract-2025.pdf

II. Scientific-social activity.

doct. ph.m.s.,prof. H.I.Aslanov During the reporting year, he served as an official opponent for a dissertation submitted for the degree of Doctor of Philosophy. A student under his scientific supervision completed a dissertation for the Doctor of Philosophy degree and passed the initial review. Participated in scientific councils as a member of the Defense Council. He is a member of the editorial board of the journals Transactions of NAS of Azerbaijan and Proceedings of the Institute Mathematics and Mechanics.

doct. ph.m.s.,prof.sen.r.a.A.R. Aliyev member of the editorial board of the journal "Proceedings of the Institute of Mathematics and Mechanics", editor-in-chief of the journals "Baku Math. Journal" and "Azerbaijan Journal of High Performance Computing: HOME
This year, he wrote reviews for the following journals:
Baku Mathematical Journal - 2 review,
Proceedings of the Institute of Mathematics and Mechanics- 1 review,
Math. Reviews (ABŞ) – 3 reviews.

doct.ph.m.s., prof. sen.re.a. I.M.Nabiyev. Participated in 3 international conferences. Published 4 scientific works, one of which is an article and three are theses (the article was published in a journal included in the Web of Science and Scopus databases). Defended 2 PhD dissertations under his scientific supervision. Served as Chairman of the State Attestation Commission (for master's degree) at the Azerbaijan State Oil and Industry University

doct.ph.m.s., prof. sen.re.a. S.A. Aliyev. İn the reporting year, he was the chairman of the State Entrance Examination Commission at Nakhchivan State University. He was the official opponent of the senior doctoral dissertation.

Many of the department's employees are engaged in pedagogical activities at various higher education institutions of the Republic.

PARTICIPATION IN SCIENTIFIC SEMINARS

All employees participated in the scientific seminars of the Institute and the department.

PUBLISHED SCIENTIFIC ARTICLES

During the reporting half-year, 26 articles (16 in Wob of Science, 19 in Scoups, 3 in foreign journals) and 17 theses (10 in foreign journals) were published by the department's employees.

Head of the Department: **Ph.D., prof. H.I.Aslanov**