Report on the annual scientific and scientific-organizational activities of the "Optimal Management" department of the Institute of Mathematics and Mechanics for 2025

Employees of the Department

The department of "Optimal Control" employs 9 researchers (4 full-time employees, 5 part-time) 7 of them are doctors of science, 1 of them are corresponding members of ANAS:

1. Professor Hamlet Guliyev – head of department

2. Professor Kamil Aidazade – Senior Researcher (part-time) (Corr. Member of ANAS)

3. Professor Telman Melikov – Senior Researcher

4. Professor Yagub Sharifov – Senior Researcher (part-time)

5. Professor Ramin Rzayev – Senior Researcher (part-time)

6. Doctor of Mathematical Sciences Yusif Gasimov – Leading Researcher (part-time)

7. Ph.D. of Physics and Mathematics Eldar Mammadov – Leading Researcher.

8. Samin Malik, Ph.D. – Scientific Researcher (part-time).

9. Isayeva Aygun – junior research worker.

According to the approved plan for 2025, the department conducted scientific research on the topic of

"Optimal control problems described by various systems":

1) WORK: "Obtaining new sufficient conditions in more complex variational and optimal control problems"

Executers: Corresponding member of ANAS, prof. Misir Mardanov, doct. of phys. Math. Sci. prof.Telman Malikov, Scientific Researcher Samin Malik, Isayeva Aygun

In this work, the problem of variation with delay was considered, and as a result, the necessary conditions for the derivation case and the sufficient conditions for the general case were investigated.

The following results were obtained on the topic:

1. M.J.Mardanov, T.K.Melikov, G.V.Hajiyeva. Necessary conditions for a minimum in variational problems with delay in the presence of degeneracies. //Journal of Contemporary Applied Mathematics, 2025. 15(1), pp. 69-91.**SCOPUS, Q4**

2. М.Дж.Марданов, Т.К.Меликов. Необходимые условия минимума в вариационных задачах с запаздыванием при наличии вырождений. //Итоги науки и техн. Соврем. мат. и ее прил. Темат. обз., **239**, ВИНИТИ, М., 2025, том 239, стр. 25–31, doi.org/10.36535/2782-4438-2025-239-25-31.

3. **M.J.Mardanov, T.K.Melikov.** Necessary Conditions for a minimum in variational problems with delay in the presence of degeneracies, Journal of Mathematical Sciences, vol.292, pp.355-361, 2025. **SCOPUS, Q2**

4. **Misir J.Mardanov, TelmanK.Melikov, SaminT.Malik.** On sufficient conditions in the classical problem of the calculus of variations.//Journal of Computational and Applied Mathematics. 2025 (çapa təqdim edilib)

5. **Misir J.Mardanov, Telman K.Melikov, Hamlet F.Guliyev.** ON COMPARING PONTRYAGIN'S MAXIMUM PRINCIPLE WITH THE BASIC NECESSARY CONDITIONS OF VARIATIONAL CALCULUS // Advanced Mathematical Models & Applications, Vol.10, No.3, 2025. **(Scopus) Q2** https://doi.org/10.62476/

6. **M.J.Mardanov, S.T.Malik.** Necessary optimality conditions for a new type of singular controls in optimal control problems. // International Journal of Control, 1-12. 2025. **WOS**, **SCOPUS**

https://www.tandfonline.com/doi/full/10.1080/00207179.2025.2522179

7. **Misir J.Mardanov, Elimhan N.Mahmudov.** Optimal control of 2-D wave differential inclusions with state constraints, Filomat, vol.39, No/ 17 (2025), pp. 5941-5953.

8. **Aygun M.Isayeva.** Analogues of Euler-Poisson Equations in Variational Problems With Delayed Argument. // Modern Problems of Mathematics and Mechanics XII İnternational Scientific Conference, pp. 83-85, September 03-06, 2025, Baku,Azerbaijan.

Popular scientific publications

1.Misir Mardanov. "On the occasion of the 85th anniversary of the outstanding scientist and sincere person, Professor Mammad Bayramoglu", Xalq newspaper, January 9, 2025 **(together with Prof. Hidayat Huseynov).**

2.Misir Mardanov. "Love at birth, love at death", 525th newspaper, January 16, 2025 (on the 75th anniversary of Zelimkhan Yagub).

3. Misir Mardanov. "A poet should be called his people's soul", Xalq newspaper, January 17, 2025.

4. Misir Mardanov. "Outstanding mathematician, scientist, skilled organizer of science and education", Respublika newspaper, January 24, 2025 (on the 75th anniversary of Yusif Mammadov).

5.Misir Mardanov. "Temple of Our Science", 525th newspaper, February 20, 2025.

6. Misir Mardanov. "Traditions continue". Science and Life Journal, No. 1(487), 2025, pp. 49-55.

7. Misir Mardanov. "An integral part of leadership character", 525th newspaper, May 13, 2025.

8. **Misir Mardanov.** "The poet who created the memory of the homeland", 525th newspaper, June 12, 2025.

9. **Misir Mardanov.** "The poet who created the memory of the homeland", Part II 525th newspaper, June 13, 2025.

10. **Misir Mardanov.** "Master of diplomacy", 525th newspaper, June 14, 2025.

11. **Misir Mardanov.** “Rate people in their health”, Part I 525th newspaper, July 03, 2025.

12. **Misir Mardanov.** “Rate people in their health”, Part II 525th newspaper, July 04, 2025.

13. **Misir Mardanov.** "Let's not forget, they forget", Part I, Newspaper 525, September 3, 2025.

14. **Misir Mardanov.** “Let's not forget, they forget”, Part II, 525th newspaper, September 04, 2025.

15. **Misir Mardanov.** “Let's not forget, they forget”, Part III, 525th newspaper, September 05, 2025.

16. **Misir Mardanov.** “From Stalin to Gorbachev, some people admire him, some people marvel at him, some people envy him, but everyone respects him - Mirza Ibrahimov”, Part I, 525th newspaper, October 28, 2025.

17. **Misir Mardanov.** “From Stalin to Gorbachev, some people admire him, some people marvel at him, some people envy him, but everyone respects him - Mirza Ibrahimov”, Part II, 525th newspaper, October 29, 2025.

18. **Misir Mardanov.** “From Stalin to Gorbachev, a phenomenon that arouses sympathy in some, amazement in others, envy in others, but respect in all - Mirza Ibrahimov”, Part III, 525th newspaper, October 29, 2025.

Books

1. Misir Mardanov, Adalat Tahirzadeh, “Azerbaijanis who studied in higher schools until 1920” (Encyclopedic question book), Baku 2025, Volume IX, Education Publishing House, 640 pages.

2) WORK: “Study of the issue of optimizing the locations of control points for the synthesis of control effects with collected sources in the heating process”. Executer: Corresponding member of ANAS Kamil Aida-zade

The problem of synthesis of optimal control for the heat transfer process is studied in this work. The problem of optimization of the temperature measurement points of the rod in the case of heating the rod is considered. The measurement results are used to formulate control effects. The formula for the gradient of the functional with respect to the coordinates of the measurement device placement points is obtained. Based on the obtained formulas, an algorithm for the numerical solution of the problem is proposed. Computer experiments were conducted.

The obtained results were published in the following scientific works:

1. **Айда-заде К.Р., Абдуллаев В.М.** Исследование и численное решение класса коэффициентно-обратных задач для ОДУ с нелокальными условиями. // Вычислительная математика и математическая физика (подана 15 сентября 2025)

2. **Айда-заде К.Р., Гашимов В.А.** Граничное управление процессом нагрева стержня с использованием текущей и прошедшей во времени обратной связи. // Автоматика и телемеханика (подана 23 марта 2025 г.)

3. **Айда-заде К.Р., Абдуллаев В.М., Гашимов В.А.** Исследование задач управления динамическими системами с обратной связью с памятью. // Автоматика и телемеханика (подана 10февраля 2025 г.)

3) WORK: "Development of methods for solving various problems posed for some fractional models".
Executer: doct. of Math. Sci. Yusif Gasimov

During the reporting period, research was conducted in the direction of constructing the mathematical models describing some physical processes, and developing effective methods for solving them. The obtained results are published in the following scientific works:

1. Monograph: Jafari, H., Tajadodi, H., & Gasimov, Y.S. (2025). Modern Computational Methods for Fractional Differential Equations. Taylor & Francis. London. 159 p. **(Scopus)**

2. Conference: Latifa Agamalieva, Yusif Gasimov. (2025). Some problems for the eigenvalues of the elliptic operators. 9th International Conference on Computational Mathematics and Engineering Sciences, May 17-19, Diyarbakir-Turkey. p. 34.

1. Yusif Gasimov, Jalil Manafian, Aynura Aliyeva. (2025). New approach of (G′/G)-expansion method to solve the fractional differential equations arising in fluid mechanics. *Journal of Contemporary Applied Mathematics, 15*(2), 124-141. https://doi.org/10.62476/jcam.151.20 **(Scopus, Q4)**

2. Mohammadpour, M., Gashti, M.Z., Gasimov, Y.S. (2025). Detection of high-frequency oscillations using time-frequency analysis. *Review of Computer Engineering Research, 12*(3), 155-170. https://doi.org/10.18488/76.v12i3.4369**(Scopus, Q2)**

3. Jafari, H., Liaqat, M.I., Gasimov, Y.S., & Thinh, V. (2025). Theoretical study of fractional differential equations under uncertainty involving general memory kernels. *Fractals, 20,* 16.https://doi.org/10.1142/S0218348X25402522**(WOS İmpakt Faktor -2.9, Q1)**

4. Jafari, H., Meddahi, M., Nguyen, V.T., & Gasimov, Y.S. (2025). Solutions of the hyperbolic fractional inclusions under weak assumptions in Banach spaces. *Fractals*.https://doi.org/10.1142/S0218348X25402571**(Web of Science İmpakt Faktor -2.9, Q1)**

5. Jafari, H., Hammouch, Z., Argyros, I.K., & Gasimov, Y.S. (2025). Preface: Special issue on recent theoretical and numerical methods for solving nonlinear evolution equations with fractal and fractional derivatives. *Fractals*, 2502004.
https://doi.org/10.1142/S0218348X25020049 **(WOS İmpakt Faktor -2.9, Q1)**

4) WORK: "Optimal control problem for the equation of oscillations of three-layer plates"

Executer: Ph.D., prof. Hamlet Guliyev

In this work, the optimal control problem for the plate oscillation equation and the problem of the solution of the second-order parabolic equation with a discontinuity were considered, the existence theorem of the optimal controller was proved, and a necessary condition for optimality was obtained in the form of a variational inequality.

The following scientific works were published during the reporting period:

1. **Hamlet F.Guliyev, Khayala I.Seyfullayeva.** Reducing the inverse problem for a one nonlinear equation of vibrations of thin plate to an optimal control problem and its investigation. // Tran.Natl.Acad. Sci. Phys.-Tech. Math. Sci. Mechanics, 44(8), 11-20 (2024) **(Scopus), Q3**
2. **Hamlet F.Guliyev, Khayala I.Seyfullayeva.** Reducing the inverse problem for a one nonlinear equation of vibrations of thin plate to an optimal control problem and its investigation. // International Conference on Management and Control in Solving Engineering Problems (MaCoSEP 2025) March 13-15, 2025, Baku, Azerbaijan (The anchor has been accepted)
3. **Hamlet F.Guliyev, Khayala I.Seyfullayeva.** Determination the right hand side of the linear equation of oscillations of plate-like constructions. // Advenced Mathematical Models & Applications. Vol.10. №1, 2025, pp. 17-25. **(Scopus)Q2**
4. **Hamlet F.Guliyev, Khayala I.Seyfullayeva.** Optimal Control Problem for the Equation in the Special Cases of Thin Plate with Boundary Control. // 6TH İNTERNATIONAL CONFERENCE ON PROBLEMS OF CYBERNETICS AND INFORMATICS, AUGUST 25-28, 2025, BAKU, AZERBAIJAN.s.148-149.
5. **H.F.Guliyev, Vusala N.Nasibzadeh.** On determining higher coefficient of a second order hyperbolic equation by the variational method.// International Journal of Applied Mathematics, Vol. 38, No. 3 (2025) pp. 323-334 **(Scopus)Q2**
6. **H.F.Guliyev, Vusala N.Nasibzadeh.** On Determining Higher Coefficient of a Second Order Hyperbolic Equation by the Variational Method.// 6TH İNTERNATIONAL CONFERENCE ON PROBLEMS OF CYBERNETICS AND INFORMATICS, AUGUST 25-28, 2025, BAKU, AZERBAIJAN. s.147-148
7. **Hamlet F.Guliyev, H.T.Tagıev, Tunzalə M.Huseynova.**Optimal control problem for second order hyperbolic equations with non-local condition with control in coefficients.// Izvestiya Mathematics, 2025, **Q2**, Vol. 89, Issue 6, https://www.scimagojr.com/journalsearch.php?q=23294&tip=sid&clean=0
8. **Misir J.Mardanov, Hamlet F.Guliyev, Hikmet T.Tagiyev.** An Optimal Control Problem for Parabolic Equation with Nonlocal Boundary Condition, Riyaziyyat və Mexanikanın Müasir Problemləri XII Beynəlxalq elmi konfrans, september 03-06, pp. 97-100, 2025, Baku.
9. **Hamlet F.Guliyev, Idrak M.Askerov.** (2025). The problem of finding the right-hand side of the second order hyperbolic equation with discontiuous solutions// Shusha Scientific Journal, 1(1). https://shushascientificjournal.com/index.php/pub/article/view/23
10. **Hamlet F.Guliyev, Idrak M.Askerov.** (2025). Optimal control problem with the right-hand side of the unstable state second order parabolic hyperbolic equation //

Dedicated to the 102nd Anniversary of the National leader of Azerbaijan, Heydar Aliyev. IX INTERNATIONAL SCIENTIFIC CONFERENCE OF YOUNG RESEARCHERS, 23-24 MAY , 2025, BAKU, AZERBAIJAN. pp.25-28

11.M.J.Mardanov, H.F.Guliyev, I.M.Askerov. Optimal control problem with coefficient of the unstable state second order parabolic equation// Springer (In print)

5) WORK: "Construction an approximate solution to differential equations given with a two-point boundary condition by the iteration method"

Executers: Corresponding member of ANAS, prof. Misir Mardanov and doct. of Math. Sci. prof. Yaqub Sharifov

This paper studies a system of hyperbolic equations defined by nonlocal (point and integral) boundary conditions, which is a perturbation of the classical Goursat-Darboux problem. Necessary conditions for the solvability of the problem are found. The Green's function for the boundary value problem is constructed, and the boundary value problem is reduced to an equivalent integral equation. Using the principle of contracting Banach mappings, conditions for the existence and uniqueness of a solution to the boundary value problem are found. Specific examples are given illustrating the validity of the obtained results.

1. **M.J.Mardanov, Ya.A.Sharifov.** Investigation of Goursat-Darboux System with Integral Boundary Conditions, Azerbaijan Journal of Mathematics V.15, No2, 2025, July, pp.113-123.**WOS, SCOPUS**
2. **М.Дж.Марданов, Я.АШарифов.** Существование и единственность решений системы Гурса–Дарбу с интегральными граничными условиями // Вестн. Сам.гос. техн. ун-та. Сер. Физ.-мат. науки, 2025, No2, 241–255. **WOS, SCOPUS, Q3**
3. **Misir J.Mardanov, Yagub A.Sharifov, Aytan R.Mammadli.** Investigation Of A System Of Hyperbolic Equations With Nonlocal Conditions // Proceedings of the Institute of Mathematics and Mechanics, National Academy of Sciences of Azerbaijan. **WOS, SCOPUS** (çapdadır)
4. **Yagub A.Sharifov, Aytan R.Mammadli, Farah M.Zeynally.** The Goursat-Darboux system with two-point boundary condition // Trans. Natl. Acad. Sci. Azerb.Ser. Phys.-Tech. Math.Sci. Mathematics, 45 (1), 142-152 (2025). **SCOPUS, Q3**
5. **Yagub A.Sharifov, Ayten R.Mammadli**. Investigation of a System of Hyperbolic Equations with Nonlocal Boundary Conditions // XII INTERNATIONAL SCIENTIFIC CONFERENCE “Modern Problems Of Mathematics And MechanicS”, pp. 289-290, September 03-06, 2025, Baku, Azerbaijan.

5. Sharifov A.Yagub, Agamammadova N.Chinara, Zeynally M.Farah, Shirinov V.Taleh. Existence And Uniqueness Of Solutions For Nonlinear Second-Order Impulsive Differential Equations With Twopoint Boundary Conditions //Advanced Mathematical Models & Applications. **SCOPUS** (çapdadır)

6. Y.A.Sharifov, A.R.Mammadli. Studying a system of non-local condition hyperbolic equations // Bulletin of the Karaganda University. MathematicsSeries, No. 4(120), 2025. **WOS, SCOPUS** (submitted to print)

6) A scientific research work was conducted on the topic of "Approbation of the academic rating system and comparative analysis with existing approaches": Executers: Corresponding member of ANAS, prof. Misir Mardanov, doctor of technical science, professor Ramin Rzayev

During the reporting period, a methodology for assessing the multidisciplinary activity of a university teacher was developed using neuro-fuzzy analysis methods with the involvement of expert assessments. The proposed approach to assessing the activity of teachers is implemented through the development of the appropriate option included in the EMPRO information system, which provides analytical and information support for the Bologna educational process.

The following scientific works were published in this direction during the reporting period:

1. Misir Mardanov, Elchin Aliyev, Ramin Rzayev, Tural Mohsumzada. Neural-Fuzzy Approach to Calculating the Academic Index Reflecting the Activity of a University Teacher // Springer Series "Lecture Notes in Networks and Systems" **(indexed in Scopus and submitted for consideration in Web of Science)** (Çapa qəbul edilib)

2. Misir Mardanov, Elchin Aliyev, Ramin Rzayev, Tural Mohsumzada. "Neural-Fuzze Approach to Calculating the Academic İndex Reflecting the Activity of a University Teacher"// Intelligent and Fuzzy Systems Artificial Intelligence in Human – Centric, Resilient & Sustainable Industries, Proceedings of the INFUS 2025 Conference, pp. 142-154, vol.3.https://doi.org/10.1007/978-3-031-98565-2_17

3. Mərdanov M.C., Rzayev R.R., Əliyev E.R., Rəhmanov Ə.S Comprehensive Assessment of the Activities of University Teachers Using Fuzzy Decision-Making Methods// The International Conference on Intelligent and Fuzzy Systems (INFUS),29-31 July 2025,Yıldız Technical University Faculty of Mechanical Engineering, İstanbul. (submitted to print)

4. Mərdanov M.C., Əliyev E.R., Rəhmanov Ə.S., Abdullayev X.X. Universitet müəlliminin fəaliyyətini əks etdirən akademik indeksin hesablanması üçün neural-fuzzy yanaşma // Azərbaycan məktəbi. Azerbaijan Journal of Educational Studies. 2025, №2/707.

7) WORK: "Investigation of the variational principle for a spectral problem with a two-parameter compact self-adjoint operator under various determination conditions" Executers: Ph.D. of Physics and Mathematics Eldar Mammadov

During the reporting period, the spectra of the multiparameter spectral problem with compact self-adjoint operator, the variation principle for this problem, the numerical image of this problem, its properties were investigated, and the independency between certain determination conditions in this special type of problems was investigated. In addition, the set of elements corresponding to the points with the smallest modulus of the sum of the coordinates of the points in the numerical image of the multiparameter spectral problem with compact self-adjoint operator was investigated, and it was proved that this set is a finite-dimensional set and that the sum of the operators separating the spectra in this set is invariant.

The following scientific works were published during the reporting period:

1. Eldar Sh.Mammadov, S.T.Mustafayev. On The Set of Minimizing Elements of one Spectral Problem. // XII Int. Sci. Conf. Modern problems of Mathematics and Mechanics. 2025. Baku. Pp. 159-161.

2. Eldar Sh.Mammadov, S.T.Mustafayev. On one property of the numerical range of a two parameter spectral problem. // Int. Sci. Conf. 2025. Gence. Səh. 170-172

3. Eldar Sh.Mammadov, Mustafayev S.T., Kasamanli H.Askerova R. One Property of The Numerical Range of A Two-Parameter Spectral Problem. // German International Journal of Modern Science (DEUTSCHE internationale Zeitschrift für zeitgenössische Wissenschaft). 2025. N114. pp. 26-30.

DOI: 10.5281/zenodo.17400761

Final Information

During the year, the department's employees published

1) 18 popular science and 32 scientific works (including 1 book, 1 monograph, 21 articles (17 of the articles were published in journals included in the Scopus and WOS databases), 9 theses (1 in Turkey);

2) 18 scientific works were accepted for publication.

The following scientific seminars of the department were held

1. 09.01.2025 - Senior Researcher of the Department of “Optimal Control”, doct. of ph. math. sci., prof. Telman Malikov “Sufficient Conditions in the Calculus of Variations” topic; (continued)

2. 16.01.2025 - Senior Researcher of the Department of “Optimal Control” doct. of ph. math. sci., prof. Telman Malikov “Sufficient Conditions in the Calculus of Variations” topic; (continued)

3. 23.01.2025 - Senior Researcher of the Department of “Optimal Control” doct. of ph. math. sci., prof. Telman Malikov “Sufficient Conditions in the Calculus of Variations” topic; (continued)

4. 30.01.2025 - Senior Researcher of the Department of “Optimal Control” doct. of ph. math. sci., prof. Telman Malikov “Sufficient Conditions in the Calculus of Variations” topic; (continued)

5. 06.02.2025 - Senior Researcher of the Department of “Optimal Control” doct. of ph. math. sci., prof. Hamlet Guliyev topic “Optimal control problem with coefficients of a two-order parabolic equation with unstable solution”;

6. 13.02.2025 - Senior Researcher of the Department of “Optimal Control” doct. of ph. math. sci., prof. Hamlet Guliyev topic “Optimal control problem with coefficients of a two-order parabolic equation with unstable solution”; (continued)

7. 06.03.2025 - Leading Researcher of the Department of “Optimal Control”, Ph.D., Associate Professor Eldar Mammadov topic “Variation principle in multi-parameter spectral problems”;

8. 03.04.2025 - Leading Researcher of the Department of “Optimal Control”, Ph.D., Associate Professor Eldar Mammadov, topic “Variation Principle in Multiparameter Spectral Problems”; (continued)

9. 10.04.2025 - Senior Researcher of the Department of “Optimal Control”, Professor Yagub Sharifov, topic “Study of Some Nonlocal Conditional Boundary Problems”;

10. 17.04.2025 - Senior Researcher of the Department of “Optimal Control”, dr of technical sciences, prof. Ramin Rzayev, topic “Artificial Intelligence and Digital Economy: Current Status and Development Prospects”;

11. 24.04.2025 - Doctoral Student of the Department of “Optimal Control”, Narmina Gubatova, topic “Second-order Necessary and Sufficient Conditions for Extremum in Variational Problems with One End Free”;

12. 01.05.2025 - Doctoral student of the “Optimal Control” department Narmina Gubatova “Second order necessary and sufficient conditions for extremum in one-end free variation problems”; (continued)

13. 08.05.2025 - Doctoral student of the “Optimal Control” department Narmina Gubatova “Quadratic functional in one-end free variation problems”;

14. 15.05.2025 - Leading researcher of the “Optimal Control” department, doct. of Math. Sci. Yusif Gasimov “Some boundary problems in limited domains for the Pauli operator”;

15. 22.05.2025 - Associate professor of the Baku Higher Oil School Nijat Aliyev “Subspace method for the estimation of large-scale structured real stability radius”;

16. 29.05.2025 - Narmina Gubatova, a doctoral student in the Department of "Optimal Control", presented the topic “Application of Higher-Order Necessary Conditions to an Optimal Control Problem”.

17. 12.06.2025 - Narmina Gubatova a doctoral student in the Department of "Optimal Control" “Application of Higher-Order Necessary Conditions to an Optimal Control Problem”. (Continuation.)

18. 16.10.2025 - Senior Researcher of the Department of of “Optimal Control” department, doct. of ph. math. sci., prof. Telman Melikov “Comparison of the maximum principle with the Jacobian condition in the calculus of variations”.

19. 23.10.2025 - Senior Researcher of the Department of of “Optimal Control” department, doct. of ph. math. sci., prof. Telman Melikov “Comparison of the maximum principle with the Jacobian condition in the calculus of variations”. (Continuation.)

20. 30.10.2025 - Associate Professor Rashad Mastaliev, a leading research fellow at the Institute of Control Systems "On the Optimality of Eigencontrols in an Optimal Control Problem Described by First-Order Stochastic Hyperbolic Equations".

SCIENTIFIC AND SOCIAL ACTIVITIES

The XII International Scientific Conference entitled “Modern Problems of Mathematics and Mechanics” was held **on September 03-06, 2025**. Hamlet Guliyev chaired the “Differential Equations and Optimal Control -1” section at the conference.

Hamlet Guliyev, Yagub Sharifov, Eldar Mammadov, Aygun Isayeva, from the department staff, spoke at the conference and were awarded certificates and their theses were published.

The head of the department, Doctor of Physical and Mathematical Sciences, **Professor Hamlet Guliyev**, is a part-time professor at the Department of Mathematics and Informatics at the Azerbaijan University, and is a member of the editorial board of the journal “Advanced Mathematical Models & Applications”.

Doctor of Physical and Mathematical Sciences, Corresponding Member of ANAS, Professor Kamil Aydazadeh is the head of the laboratory "Numerical Methods of Decision Making in Deterministic Systems" of the Institute of Control Systems of ANAS, a member of the editorial board of the "Ege University Journal of the Faculty of Science" journal published in Turkey, the international journal "NASA Proceedings of the Institute of Mathematics and Mechanics", the journal "Prikladnaya Matematika и фунданаланая информатика" published in Russia, the international journal TWNS "Pure and Applied Mathematics", Proceedings of the Institute of Applied Mathematics, ANAS News (Physical and Technical Sciences and Mathematical Sciences Series) Mathematics Edition, ANAS News (Physical and Technical Sciences and Mathematical Sciences Series, "Informatics and Management Problems"), and the editorial board of the "Abituriyent" journals of the Azerbaijan State Examination Center.

Professor Telman Malikov is a member of the Expert Council on Mathematics and Mechanics of the Academy of Sciences of the Republic of Azerbaijan, a member of the editorial board of the journal **Proceedings of the Institute of Mathematics and Mechanics.**

Professor Yagub Sharifov is a member of the editorial board of the journal “Proceedings of the Institute of Applied Mathematics”, a member of the **Scientific Committee of the ICRAPAM-2019 conference**.

Professor Ramin Rzayev is a senior researcher at the Institute of Control Systems of the Academy of Sciences of the Republic of Azerbaijan, a member of the editorial board of the scientific journal “Automation and Measurements in Mechanical and Instrument Engineering”, a member of the program committee of the international scientific conference “Information Systems and Technologies: Achievements and Prospects”, a member of the program committees of the international scientific conferences “ICSCCW - International Conference on Theory and Application of Soft

Computing, Computing with Words and Perceptions" and "ICAFS - International Conference on Theory and Applications of Fuzzy Systems and Soft Computing".

The leading researcher of the department, Yusif Gasimov, is the founder and director of **Jomard Publishing**, which publishes 8 scientific journals, the editor-in-chief of the international journal **Advanced Mathematical Models & Applications**, a member of the editorial board of the international journal **Journal of Modern Technology and Engineering**, a member of the editorial board of the international journal **Applied Mathematics & Information Science**s, a member of the editorial board of the **Proceedings of the Institute of Mathematics and Mechanics**, and the editor of a special issue of the journal Fractals **(Impact Factor-3.3, Q1).**

A total of 462 references were made to the works of the department's employees in 2025:

References:

Misir Mardanov 80
Telman Malikov 39
Kamil Aydazade 104
Hamlet Guliyev 5
Yusif Gasimov 140
Ramin Rzayev 29
Yaqub Sharifov 47
Samin Malik 16
Aygun Isayeva 2

Head of department: **Professor Hamlet Guliyev**