International Scientific Conference

THE NATIONAL UNIVERSITY OF UZBEKISTAN
NAMED AFTER MIRZO ULUGBEK
INSTITUTE OF MATHEMATICS NAMED AFTER V.I. ROMANOVSKY
TASHKENT STATE TRANSPORT UNIVERSITY

IX XALQARO ILMIY "AMALIY MATEMATIKA VA AXBOROT TEXNOLOGIYALARINING DOLZARB MUAMMOLARI – AL-XORAZMIY 2024" KONFERENSIYASI

DASTURI

IX INTERNATIONAL SCIENTIFIC CONFERENCE "ACTUAL PROBLEMS OF APPLIED MATHEMATICS AND INFORMATION TECHNOLOGIES AL-KHWARIZMI 2024"

PROGRAM

IX МЕЖДУНАРОДНАЯ НАУЧНАЯ КОНФЕРЕНЦИЯ «АКТУАЛЬНЫЕ ПРОБЛЕМЫ ПРИКЛАДНОЙ МАТЕМАТИКИ И ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ – АЛЬ-ХОРЕЗМИ 2024»

ПРОГРАММА

October 22-23, 2024, Tashkent, Uzbekistan

Dedicated to the 630th anniversary of the birth of Mirzo Ulugbek

https://apmath.nuu.uz

MAIN SCIENTIFIC SECTIONS OF CONFERENCE

- Scientific heritage of Al-Khwarizmi
- Mathematical modeling
- Computational and discrete mathematics
- Differential equations and equations of mathematical physics. Inverse and ill-posed problems
- Artificial intelligence
- Mathematical analysis and its applications
- Information Security
- Computational linguistics
- Information technologies in education
- Theory of probability and mathematical statistics
- Algebra, geometry and functional analysis

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Website: https://apmath.nuu.uz/

"Actual Problems of Applied Mathematics and Information Technologies Al-Khwarizmi 2024"

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Abdurakhmonov Odil Khalandarovich - Rector of Tashkent State Transport University, Uzbekistan

Ayupov Shavkat Abdullayevich - Director of the Institute of Mathematics named after V.I. Romanovsky of the Academy of Sciences of the Republic of Uzbekistan, Academician, Uzbekistan

Madjidov Inom Urishivich - Rector of the National University of Uzbekistan, Uzbekistan

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Rozikov Utkir - Deputy Director of the Institute of Mathematics named after V.I. Romanovsky of the Academy of Sciences of the Republic of Uzbekistan, Academician, Uzbekistan

Sadullaev Azimbay - Academician of the Academy of Sciences of the Republic of Uzbekistan, Academician, Uzbekistan

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(USA), Ignatev Nikolay (Uzbekistan), Ikramov Isroil (Uzbekistan), Ilolov Mamadsho (Tadjikistan), Jalilov Adkham (Kazakhstan), Jenaliyev Muvasharkhan (Kazakhstan), Jumanov Isroil (Uzbekistan), Kabanikhin Sergey (Russia), Kalmenov Tynysbek (Kazakhstan), Kaltaev Aydarxan (Kazakhstan), Kamilov Mirzoyan (Uzbekistan), Karimov Erkin (Uzbekistan), Karimov Majid (Uzbekistan), Kerembekov Akylbek (Kyrgyzstan), Khadjiev Djavad (Uzbekistan), Khajiev Ikrom (Uzbekistan), Khaldjigitov Abduvali (Uzbekistan), Khudayberganov Gulmirza (Uzbekistan), Khudjayarov Bakhtiyor (Uzbekistan), Korchenko Aleksandr (Ukraine), Kozhanov Aleksandr (Russia), Lakaev Saidakhmat (Uzbekistan), Lutfullaev Makhmud (Uzbekistan), Mahmoud Abdel-Aty (Egypt), Marakhimov Avaz (Uzbekistan), Mardanov Misir (Azerbaijan), Matrasulov Davron (Uzbekistan), Mayer Ernst (Germany), Muxambetjanov Saltanbek (Kazakhstan), Normuradov Chori (Uzbekistan), Nursultanov Yerlan (Kazakhstan), Oinarov Ryskul (Kazakhstan), Otelbaev Mukhtarbay (Kazahstan), Panakhov Etibar (Turkey), Rasulov Abdujabbor (Uzbekistan), Rasulov Tulkin (Uzbekistan), Rasulova Mukhayyo (Uzbekistan), Ravshanov Normakhmad (Uzbekistan), Ruzhansky Michael (Belgium), Sadullaev Azimbay (Uzbekistan), Sadybekov Makhmud (Kazakhstan), Sami Khassan Retahy Makhmud (Saudi Arabia), Shadimetov Kholmatvay (Uzbekistan), Shoimkulov Bakhodir (Uzbekistan), Smaylov Esmuxambet (Kazakhstan), Sugimoto Mitsuru (Japan), Tohirov Jozil (Uzbekistan), Umarov Sobir (USA), Yusupbekov Nodirbek (Uzbekistan), Zamyatin Aleksandr (Russia), Zygmund Vetulani (Polish).

Working group:

Khudayberganov Yashin, Akhmedova Kunduz, Allaberdiyev Bobur, Bobokandov Makhmud, Kabiljanova Feruza, Khaydarov Abdugappar, Khojiyev Tojidin Kairovich, Mamatkulova Muyassar, Mamatov Abror, Nazirova Dilorom, Nurumova Aziza, Tillayev Azamat, To‘laganov Zakir, Ubaydullayeva Gulnora, Urinbayev Erkin, Yarmetova Dilafruz, Muhammadiyev Firdavs (Uzbekistan).

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

SCHEDULE OF THE CONFERENCE

October 22, 2024

Registration	**08:00**	**Rectorate, 1st floor, Information Resource Center, building foyer**
Opening ceremony	**09:30-10:00**	**Rectorate, 1st floor, Information Resource Center, Assembly Hall**
Plenary session	**10:00-11:20**	**Rectorate, 1st floor, Information Resource Center, Assembly Hall**
Coffee break	**11:20-11:40**	**Rectorate, 1st floor, Information Resource Center, building foyer**
Plenary session	**11:40-13:00**	**Rectorate, 1st floor, Information Resource Center, Assembly Hall**
Lunch	**13:00-14:00**	**Huvaydo restaurant**
Special sessions	**14:00-16:00**	**Faculty of Applied Mathematics and Intellectual Technology, V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan**
Coffee break	**16:00-16:20**	**Faculty of Applied Mathematics and Intellectual Technology, V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan**
Special sessions	**16:20-18:30**	**Faculty of Applied Mathematics and Intellectual Technology, V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan**

October 23, 2024

Plenary session	**09:00-10:00**	**Rectorate, 1st floor, Information Resource Center, Assembly Hall**
Coffee break	**10:00-10:20**	**Rectorate, 1st floor, Information Resource Center, building foyer**
Plenary session	**10:20-13:00**	**Rectorate, 1st floor, Information Resource Center, Assembly Hall**
Special sessions	**14:00-16:00**	**Faculty of Applied Mathematics and Intellectual Technology, V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan**
Closing of the conference	**16:20-17:00**	**National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 2nd floor, Assembly Hall**

Plenary talks-20 minutes
Section talks-10 minutes

Working languages of the Conference: English, Uzbek and Russian.
Official website of the conference: https://apmath.nuu.uz/

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE
October 22, 2024-Tuesday Keynote talk and Session Day 1
Official opening of the conference

Zoom address of the conference plenary session:
https://us06web.zoom.us/j/88926690091?pwd=yLSMoRA2tISgvpb7HcoAQiHQOPE6tp.1
Conference ID: 889 2669 0091
Pass code: 2024

09:30-10:00 Welcome words	***Moderator: Ashurov Ravshan Radjabovich*** Professor. Institute of Mathematics named after V. I. Romanovsky Academy of Sciences of Uzbekistan
	Sharipov Kongratbay Avezimbetovich Minister of higher education, science and innovation of the Republic of Uzbekistan, Doctor of Technical Sciences, Professor
	Ayupov Shavkat Abdullaevich Director of IM of AS of Uzbekistan. Deputy of the Senate of the Oliy Majlis of the Republic of Uzbekistan, Hero of Uzbekistan, Academician
	Madjidov Inom Urishevich Rector of National University of Uzbekistan named after Mirzo Ulugbek, Doctor of Technical Sciences, Professor
	Odil Abdurakhmanov Kalandarovich Rector of Transport University, Doctor of Economics, Professor
	Bakytzhan Zhumagulov Tursinbayevich Academician of NAS RK, President of TWMS, Deputy of the Senate of the Parliament of the Republic of Kazakhstan, Kazakhstan
	Alimov Shavkat Orifjonovich Professor of National University of Uzbekistan named after Mirzo Ulugbek, Academician
	Sherzod Mustafakulov Igamberdiyevich Rector of Nordic International University, Tashkent, Professor

PLENARY SESSION

10:00-12:20 Lectures	***Moderator: Ashurov Ravshan Radjabovich*** Professor. Institute of Mathematics named after V. I. Romanovsky Academy of Sciences of Uzbekistan
10:00-10:20	***Ayupov Shavkat Abdullaevich*** Local and 2-Local Derivations on Octonion and Malcev Algebras
10:20-10:40	***Sakriani SAKTI*** Computational Linguistics and Artificial Intelligence
10:40-11:00	***Joseph MARIANI*** The Quest for Language Resources in a Multilingual World
11:00-11:20	***Patrick PAROUBEK*** On language and emotion modeling
11:20-11:40	***Coffee break***
11:40-12:00	***Dr. Zygmunt Władysław Vetulani*** From Al-Khwarizmi to today's AI
12:00-12:20	***Siddheshwar Pradeep Ganapathis*** Linear and nonlinear Brinkman-Benard convection of Newtonian liquid confined in cylindrical/rectangular enclosures
12:20-12:30	**CONFERENCE PHOTO**
12:30-14:00	**LUNCH**

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

October 23, 2024-Wednesday Keynote talk and Session Day 2

Zoom address of the conference plenary session:
https://us06web.zoom.us/j/88926690091?pwd=yLSMoRA2tISgvpb7HcoAQiHQOPE6tp.1
Conference ID: 889 2669 0091
Pass code: 2024

PLENARY SESSION

09:00-13:00 Lectures	***Moderator: Ashurov Ravshan Radjabovich*** Professor. Institute of Mathematics named after V. I. Romanovsky Academy of Sciences of Uzbekistan
09:00-09:20	***Mitsuru Sugimoto*** A constructive approach to nonlinear wave equations
09:20-09:40	***Ashyralyev Allaberen*** Kernel identification problem for a parabolic integro-differential equation in a Banach space
09:40-10:00	***Ekrem Savaş*** Lacunary strong invariant summability of weight g on seminorm space
10:00-10:20	***Coffee break***
10:20-10:40	***Kozhanov Alexander Ivanovich*** Hyperbolic and quasihyperbolic equations with degeneracy
10:40-11:00	***Shadimetov Kholmat Makhkambaevich*** Optimal cubature, interpolation and difference formulas in Hilbert spaces.
11:00-11:20	***Sadullaev Azimbay*** *Compactness of Hessians in the class of the* ***m****-convex functions*
11:20-11:40	***Ashurov Ravshan Radjabovich*** On systems of fractional nonlinear partial differential equations
11:40-12:00	***Aripov Mersaid*** Numerical modeling of nonlinear processes in one and two componential medium
12:00-13:00	**CONFERENCE PHOTO**
13:00-14:00	**LUNCH**

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 1

SECTION 1, 5, 7. SCIENTIFIC HERITAGE OF AL-KHWARIZMI, ARTIFICIAL INTELLIGENCE, INFORMATION SECURITY

Chairmans: Prof. N. Ignatev, Prof. A. Kobulov
Secretary: I. Saymanov
Time: October 22, 2024 at 14:00-18:30
National university of Uzbekistan, Faculty of Applied Mathematics and Intellectual Technology, 5th floor, 503 – auditorium.
Zoom address of the conference for section sessions:
https://us06web.zoom.us/j/3591619857?pwd=DlVxdfCDQKeZofbwq3Es7K7z3NPTiB.1&omn=88078979317
Conference ID: 359 161 9857
Pass code: 2024

№	Authors and Titles
1.	**Zygmunt Vetulani** *From Al-Khwarizmi to today is AI.*
2.	**Azhari A.** *About a hybrid-type recognition model*
3.	**Yilihamujiang Yusupu** *Application of Matrices in Plant Recognition and Artifi cial Intelligence: A PYNQ-Z2-Based Solution*
4.	**Abdurakhimov B. F., Akhadova O'. Ch.** *Algorithms for solving the factorization problem*
5.	**Geldibayev B. Y. Toliyev X.I.** *Application of Machine Learning Algorithms for Early Detection of Lameness in Cows Based on Movement Data Analysis*
6.	**Ignatev N. A., Akbarov B. Kh., Dexqonov D., Khoshimov Kh.** *On finding patterns in the database of tulip subspecies from the Red Book*
7.	**Ignatev N. A., Tursunmurotov D. X.** *On the regularization of recognition algorithm estimates by the k-nearest neighbors method*
8.	**Juraev G.U., Mavlonov A.B., Shamurotov S.B.** *Develop a new public key encryption algorithm with iterative properties*
9.	**Madrakhimov Sh. F., Khurramov A. H.** *Increasing Transparency of Outputs in Fuzzy Systems*
10.	**Mirzaev N. M., Rasulmukhamedov M. M., Voronov A. A., Gaffarov N. Y., Orifov A. A.** *About a hybrid-type recognition model*
11.	**Mirzaeva G. R., Inyutin A. V., Ibragimova S. N., Meliev F. F.** *A statistical approach to building a recognition model based on the construction of two-dimensional decisive rules*
12.	**Nigmatov X., Rakhmanov K. S.** *Determination of the main quality indicators of computer networks with different types of communication channels*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 2

SECTION 1, 5, 7. SCIENTIFIC HERITAGE OF AL-KHWARIZMI, ARTIFICIAL INTELLIGENCE, INFORMATION SECURITY

Chairmans: Prof. N. Ignatev, Prof. A. Kobulov

Secretary: I. Saymanov

Time: October 23, 2024 at 14:00-16:00

National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 5th floor, 503 – auditorium.

Zoom address of the conference for section sessions:
https://us06web.zoom.us/j/3591619857?pwd=DlVxdfCDQKeZofbwq3Es7K7z3NPTiB.1&omn=88078979317

Conference ID: 359 161 9857

Pass code: 2024

№	Authors and Titles
1.	**Normatov I.X., Juraev M.T.** *Development of a decision-making model based on network data flow analysis*
2.	**Omonov A. A., Akhatkulov S. A.** *Some improvements to the stochastic gradient descent optimization algorithm in deep learning*
3.	**Otakhonov A.A.** *Phishing threat detection using the most important features of a URL*
4.	**Rabbimov G.M., Kobilov S. S.** *Application of computer vision methods for real-time object recognition and classification*
5.	**Rakhimov B. B., Rakhimova M. A., Makharov K. T.** *Assessing Epidemiologists' Pandemic Readiness Using AI-Driven Analysis*
6.	**Rakhmanov K. S., Tuychiyev X. M.** *Analyzing web sites using Artificial Intelligence*
7.	**Rasulmuhamedov M. M., Tashmetov K. Sh.** *Traffic flow forecasting using KAN*
8.	**Sadullaeva M.Z**. *Parabolic method for determining the magnitude of an angle*
9.	**Samandarov B. S., Tajibaev Sh. Kh. Esbergenov A. J.** *Forecasting nutrient requirements based on animal physiological status and feed nutritional value*
10.	**Toliyev Kh. I., Geldibayev B. Y**. *A neural network-based model for predicting milk yield*
11.	**Uteuliev N. U., Djaykov G. M., Dauletnazarov J. I.** *Efficiency of the YOLOv5 and YOLOv8 models in agriculture for weed detection*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 1

SECTION 2. MATHEMATICAL MODELING

Chairmans: Prof. S. Mukhambetzhanov, Prof. A. Begmatov
Secretary: M. Bobokandov
Time: October 22, 2024 at 14:00-18:30
National university of Uzbekistan, Faculty of Applied Mathematics and Intellectual Technology, 2nd floor, Assembly Hall
Zoom address of the conference for section session:
https://us06web.zoom.us/j/2938545015?pwd=MLvSrTHJ2yh2TTPN5FYdo5aaGJb6om.1&omn=83608365633
Conference ID: 293 854 5015
Pass code: 1

№	Authors and Titles
1.	**Sugimoto M.** *A constructive approach to nonlinear wave equations*
2.	**Bayjasarova K.K., Dzhanabekova S.K.** *Mathematical and Numerical Modeling of Two-Phase Fluid Processes in a Porous Medium*
3.	**Khozhiev T. K.** *About the computational experiment for numerical solution of the thermal conduction problem with nonlinear boundary conditions*
4.	**Koshkarbayev N. M.** *Travelling breaking waves*
5.	**KurbanalievA. I., Kalmurzaeva A. T., Kalbekova M. Z.** *Numerical modeling of convective heat transfer with distributed heat*
6.	**Kurbanaliev A. I., Oskonbaev M. Ch.,Murzakmatova Z.J.,Kalbekova M.J.** *Three-dimensional mathematical modeling of urban building aerodynamics*
7.	**Kurbanaliev A. Y., Teshebaeva U. T., Mars T**. *Mathematical modelling of turbulent reacting fl ows using OpenFOAM package*
8.	**Marchenko L.S., Parovik R. I.** *Modeling artificial whistlers in PyCharm*
9.	**Otenova A. Zh., Parovik R. I.** *Study of fractional nonlinear Mathieu oscillator using ABMMathieuFracSim software package*
10.	**Parovik R. I.** *Software package "ABMSelkovFracSim 1.0" for studying the dynamic Selkov system of fractional variable order with non-constant coefficients*
11.	**Yugay L.P.** *On an one conflict controlled oscillation mathematical model*
12.	**Abdullayev U.T.** *Method of numerical solution of non-divergent parabolic equations*
13.	**Ablakulov A., Kendjayev R. Kh.** *A mathematical model of the probability of road repairs.*
14.	**Akhmedova Q.S.,Yusupova Sh.B., Mirzoodilov J.N**. *Mathematical model of kashkadarya tourism development stagnation*
15.	**Alimova N. B., Parovik R. I.** *Mathematical modeling of neuron self-oscillations in a cell membrane using the FitzHugh-Nagumo fractional model with a stimulus intensity function.*
16.	**Alishev Sh. A., Bobobekov Sh.R**. *Developing students' ecological thinking through the use of digital models*
17.	**Atabaev O. X.** *To numerical solution of the degenerate parabolic problem with nonlinear source and absorption terms*
18.	**Aripov M., Bobokandov M. M., Kudratullaev N. K.** Investigation of the properties of solutions of nondivergent parabolic equations with time-weighted absorption
19.	**Aripov M., Matyakubov A.S.,Xasanov J.O.,Djabbarov O.R.** *To the qualitative properties of self-similar solutions of a cross-diff usion parabolic system not in divergence form with the source and the convective transfer*
20.	**Aripov M., Nigmanova D. A., Kudratullaev N. K.** *Self-similar solutions of a double nonlinear parabolic system of equations with variable density of non-divergent type*

21.	**Aripov M. M. Zaripova A. R., Djabbarov O. R.** *The qualitative properties of the Cauchy problem solution for a system of divergent parabolic equations with a source in one-dimensional case*
22.	**Artykbaev A., Toshmatova M. M.** *Modeling of Consecutive Curved Sections of a Railway*
23.	**Baxromov S. A., Qobilov S. Sh.** *Ergasheva Sh. E. The signifi cance of Spline Models for recovering Hydrogeological data and Increasing their productivity*
24.	**Bazarov A. A., Shoyqulov Sh. Q.** *Providing high realism and interactivity of graphic elements for VR and AR environments*
25.	**Begmatov A., Mamatova N. T.** *Dynamic effect on semi-constrained rod interacting with external medium by Winkler's model of dry friction* law**.**
26.	**Dalabaev U., Xasanova D.** *Improving the approximate analytical solution of a parabolic equation using movable nodes*
27.	**Dalabaev U.,Xasanova D.** *Refi nement of the solution of the Dirichlet problem by the method of moving nodes*
28.	**Diyorov A. M.** *Behavior of trajectories of a quadratic stochastic operator on 5-dimensional simplex*
29.	**Eshmamatova D. B., Bozorov A. A., Hakimova D. A.** *A model with hierarchical structure in the form of a degenerate Lotka – Volterra system*
30.	**Fayziev B. M., Sagdullaev O. Q.** *Degrading Solute Transport in a Two-Zone Porous Medium with Multistage Adsorption Kinetics*
31.	**Hidirova M. B., Turgunov A. M.** *Application of mathematical modeling to identify state modes in viral hepatitis B*
32.	**Ibragimov A. A., Mamurov T. T., Abdukhalilov Sh. Y.** *Solutions of nonlinear nodal equations for calculating parameters in electric power systems using constraint propagation methods*
33.	**Ikramov A. M., Polatov A. M., Adambaev U. E.,** *Polatov S. I. Study of Threedimensional Unsteady Processes of Heat Conduction in Inhomogeneous Bodies*
34.	**Imomnazarov Kh. Kh., Mikhailov A. A., Turdiev U. K., Umarov I. N.** *Study of the infl uence of the structure and parameters of the medium on the nature of the propagation of seismic waves from earthquakes*
35.	**Irisbekova M. N., Sulaymonov N. N.** *Econometrical forecasting of the demand for outsourcing services for transport logistics companies*
36.	**Isanov R. Sh., Abdigapirov A. A., Azimov J. B., Bozorov A. A., Sultankhodjaeva G.** *The problem of the motion of oncoming rigid bodies (trains)*
37.	**Isanov R.Sh., Abdigapirov A.A., Mansurova M.Yu., Yavkacheva Z.A.** *Cavitation during high-speed train movement*
38.	**Isanov R. Sh., Sharipova L. D., Abdugapirov A. A., Mansurova M. Yu.** *The problem of fl owing around a high-speed train*
39.	**Jurayev G. U., Musurmonova M. O., Xayrullayev A.F., Shukurov A.M.** *Propagation of non-stationary transverse waves from a spherical cavity near a rigid ball in an elastic space*
40.	**Juraev D. A., Muxammedov B. M., Xurramov J. A., Tuganov G. Sh.** *On the optimization of rocket trajectories and their extended mathematical modeling*
41.	**Jurayev G. U., Jabborov A. U., Musurmonova M. O., Shukurov A. M.** *Nonstationary waves from a thick-walled elastic spherical shell in an acoustic half-space*
42.	**Kalandarov A.** *Spatial Dynamic Coupled Thermoelasticity Problem in Stresses*
43.	**Kayumov Sh., Ziyadullaeva Sh. S.,Bekchanov Sh. E., Khusanov E. A., Kayumov U. B.** *Mathematical modeling of the fluid filtering problem in a multilayer environment*
44.	**Khaldjigitov A. A., Djumayozov U. Z., Bobonazarov A. A.** *New Model Equations of Thermoelasticuty in Strains*
45.	**Khaldjigitov A. A., Tilovov O. U., Khasanova Z. Z.** *Model equations in stresses for orthotropic bodies*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 2

SECTION 2. MATHEMATICAL MODELING

Chairmans: Prof. N. Ravshanov, Prof. B. Abdurakhimov
Secretary: M. Bobokandov
Time: October 23, 2024 at 14:00-16:00
National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 2nd floor, Assembly Hall
Zoom address of the conference for section session:
https://us06web.zoom.us/j/2938545015?pwd=MLvSrTHJ2yh2TTPN5FYdo5aaGJb6om.1&omn=83608365633
Conference ID: 293 854 5015
Pass code: 1

№	Authors and Titles
1.	**Khakimov, M. X., Bekova V. G.** *Analysis of nouns in uzbeki for computer translation*
2.	**Khamroeva D.N., Khamroev U.N.** *Complete eigenvalue problem for asymmetrical interval matrices*
3.	**Khaydarov A. T., Begulov U. U.** *The properties of the solutions of a cross-diff usion parabolic system in divergence form*
4.	**Khaydarov A. T., Begulov U. U.** *A global solution of the Cauchy problem for the double nonlinear heat dissipation equation*
5.	**Khaydarov A. T., Toshtemirov J. M.** *Modeling of heat propagation processes in multidimensional domains*
6.	**Khaydarov I. K., Imomnazarov B.Kh., Mikhailov A.A., Iskandarov I.K .** *Modeling of solute transport in poroelastic clay shale*
7.	**Khayitkulov B. Kh.** *Numerical solution of the non-stationary problem of optimal placement of heat sources with minimum power in a rectangle*
8.	**Khuzhayorov B., Eshdavlatov Z.** *Numerical solution of the anomalous solute transport problem in an element of fractured-porous medium with nonequilibrium adsorption*
9.	**Madatov Kh. A., Bekchanov Sh. K.** *Models and algorithms for analyzing Uzbek language based on TF-IDF*
10	**Matyakubov A. S., Ismoilova M. O.** *Research of unbounded solutions of nonlinear parabolic equations of nondivergent representation*
11.	**Matyakubov A. S., Mamatov A. U.** *Asymptotic behavior of solutions to the double nonlinearity parabolic system of equations with variable density and source*
12.	**Matyakubov A. S., Nazirova D. Kh.** *Asymptotics of blow-up solutions of nonlinear parabolic system equation in non-divergent form*
13.	**Matyakubov A. S., Salimov J. I.** *Investigation blow-up solution of non-divergent nonlinear parabolic system equations describing the processes of combustion*
14.	**Mirzaev I., Gaynazarov S.** *Conditions for transparency of the boundaries of a rectangular area for elastic waves*
15.	**Mirzaev I., Gaynazarov S.** *Mathematical modelling of the effects of seismic waves on buildings and structures in the epicentral zone of an earthquake*
16.	**Mukhambetzhanov S.** *Mathematical Modeling of Oil Displacement Considering Mass Transfer Processes*

17.	**Mukhambetzhanov S. T., Mussina A. A., Baizhasarova K. K.** *Numerical Modeling of Fluid Filtration Processes with Free Boundaries*
18.	**Narmanov O. A.** *Invariant Solutions of The Two-Dimensional Heat Equation*
19.	**Nishanov A. Kh., Samandarov B. S.** *A multi parametric model of the problem of ration preparation for livestock complex*
20	**Nuraliyev F. M., Mirzaaxmedov M. M.,Tojiyev N. Sh.,Abdullayev O. K.** *Solution of the terhmo-electro-magneto-elastisity problems of thin plate by complex forms*
21.	**Polatov A. M., Ikramov A. M., Adambaev U. E., Pulatov S. I.** *Numerical simulating of the solution to an unsteady problem of thermo elastic strain of bodies with a hole .*
22.	**Polatov A. M.,Ikramov A. M.,Odilov J. Q.** *Computer simulation of axisymmetric problems of termoelasticity*
23.	**Settiyev Sh.R.** *Mathematical model of fluid flow in sand channels*
24.	**Shoyqulov Sh. Q.** *Methods of rendering realistic materials in 3D modeling*
25.	**Saidov D. A., Yusupov J.** *Classification the document on the base of dissimilarity of texts*
26.	**Srajdinov I. F.Salimova A. I., Parovik R. I.** *Study of fractional nonlinear Van der Pol-Airy oscillator using ABMVAFracSim software package*
27.	**Srajdinov I. F.** *Solvability of a mixed problem for one composite type system*
28.	**Takhirov J. O.** *On two-temperature models of transport in inhomogeneous materials*
29.	**Urunbayev E., Oblokulov S. Z.** *Designing and creating software of a smart parking lot*
30.	**Uteuliev N. U., Begilov B. N., Qutlimuratov Yu. Q., Madreymova Z. B.** *Research on a stochastic mathematical model for cost optimization in wastewater treatment processes*
31.	**Uteuliev N. U., Djaykov G. M., Bekbosinov A. D.** *Modeling of object restoration processes using broken rays*
32.	**Uteuliev N.U., Madreymova Z.B.** *Modeling of the three-criteria stochastic ecological-economic problem of placing and agricultural production specialization*
33.	**Uteuliev N.U., Qutlimuratov Yu.Q., Begilov B.** *An algorithm for solving one stochastic ecology-economic problem of agricultural production in conditions of water resource scarcity*
34.	**Uteuliev N. U., Seidullaev A. K., Pirimbetov A. O.** *Reversing the integral geometry problem on hyperbola families and its application in seismic challenges*
35.	**Rakhmonov Z. R., Yarmetova D. I., Islomov B. A.** *Asymptotics of self-similar solutions of the heat conduction problem in an inhomogeneous medium with a source*
36.	**Rakhmonov Z. R., Urunbaev J. E.** *Critical curve of the cross-diff usion system coupled via nonlinear boundary flux*
37.	**Ruzikulov O., Rakhmonov Z.** *Investigate of the Nonlinear Diff usion System with Boundary Conditions*
38.	**Xolmurodov A. E., Matanov M.Ch. M., Quzratov M. A.** *Deterministic excitation model compatible with a free field seismic record*
39.	**Zakirov V.M., Abdullaev E. S.** *Improving the request service model for server traffic congestion*
40.	**Zakirov A. Kh., Nazarov.** *O. Outflow of liquid from a nozzle installed in a vessel of semi-infinite length*
41.	**Zaynidinov H. N., Baxromov S. A., Abdullaev B. D., Qobilov S. Sh.** *Applying Machine Learning Models to Water Resource Interdependence and Status Assessment*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 1

SECTION 3. COMPUTATIONAL AND DISCRETE MATHEMATICS

Chairmans: Prof. Ch. Ashyralyyev, Prof. R. Aloev
Secretary: A. Qaxxorov
Time: October 22, 2024 at 14:00-18:30
National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 4th floor, 410 – auditorium.
Zoom address of the conference for section session:
https://us06web.zoom.us/j/7111457420?pwd=GQ0BAyj6OqOHTboPCBbWijLhoD413K.1&omn=89234374361
Conference ID: 711 145 7420
Pass code: 1

№	Authors and Titles
1.	**Waqar A. Mohamad N.H., Muhammad F.N.** *Lower bound for the second Hyper-Zagreb index of trees with a given Roman domination number*
2.	**Ashyralyyev Ch.** *On the stable difference scheme for parabolic source identification problem with nonlocal integral condition*
3.	**Temirbekov N. M., Kerimakyn A. M.** Study of the *Navier-Stokes equations in arbitrary curvilinear coordinates describing the flowin catalytic converters of cars*
4.	**Berdyshev A. S., Aloev R. D., Bekenayeva K. S.** *The stability of the numerical solution for boundary control problems of hyperbolic systems*
5.	**Aloev R. D., Ovlaeva M. Kh.** *Numerical calculations for a one-dimensional of two-equation hyperbolic system with dynamic boundary conditions*
6.	**Aloev R. D., Alimova V. B.** *Numerical calculation of a mixed problem for a quasi-linear hyperbolic system with negative nonlocal characteristic velocity*
7.	**Boltaev A. K.** *Some properties of a high-order discrete operator*
8.	**Davlatova F. I.** *Coefficients of the optimal formulas for approximate computation of Fourier integrals*
9.	**Hayotov A. R., Olimov N. N.** *An optimal interpolation formula with derivatives in Sobolev space*
10.	**Hayotov A. R., Doniyorov N. N.** *Finite element method for second-order linear differential equations of elliptic type*
11.	**Hayotov A. R., Nafasov A. Y., Berdimuradova U. A.** *The norm of the error functional of the optimal interpolation formulas in the space* $W_2^{(2,1)}$
12.	**Hayotov A. R., Xaitov T. O.** *Approximate calculation of fractional Riemann-Liouville integrals in Hilbert space* $K_2^{(2,1)}$
13.	**Hayotov A. R., Kurbonnazarov A. I.** *An optimal quadrature formula for the approximate calculation of Fourier integrals in the space* $K_2^{(m)}(0,1)$
14.	**Ibragimov A. A., Kalkhanov P. J., Fozilov O. O.** *New results on the inclusion of related eigenvalues for the interval generalized eigenvalue problem*
15.	**Mamatov A. R.** *Algorithm for solving the maximin evasion-approach problem*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 2

SECTION 3. COMPUTATIONAL AND DISCRETE MATHEMATICS

Chairmans: Prof. Ch. Ashyralyyev, Prof. R. Aloev
Secretary: A. Qaxxorov
Time: October 23, 2024 at 14:00-16:00
National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 4th floor, 410 – auditorium.
Zoom address of the conference for section session:
https://us06web.zoom.us/j/7111457420?pwd=GQ0BAyj6OqOHTboPCBbWijLhoD413K.1&omn=89234374361
Conference ID: 711 145 7420
Pass code: 1

№	Authors and Titles
1.	**Normurodov Ch. B., Normatova M. M.** *Numerical simulation of the dynamics of derivatives of various orders of a singularly perturbed equation*
2.	**Nuraliyev F. A., Abdullayeva G. Sh.** *Application of the sixth order algebraic-hyperbolic spline to the recovery of clipped seismic record*
3.	**Nuraliev F. A., Kuziev Sh. S.** *Derivative optimal quadrature formulas in Sobolev space*
4.	**Rasulov R. G., Mahkamova D. T.** *Construction quadrature formula of the Euler-Maclauren type in the space* $W_2^{(4,3)}$
5.	**Rasulov A. S., Raimova G. M. Monte** *Carlo solution of boundary value problem for the semi-linear Helmholtz equation*
6.	**Shadimetov Kh. M., Atamuradova B. M.** *Coefficients of the optimal interpolation formulas in* $W_2^{(1,0)}$ (0,1) *space*
7.	**Shadimetov Kh. M., Elmuratov G. Ch.** *Formulas for approximate integration with optimal error*
8.	**Shadimetov Kh. M., Gulomov O. Kh.** *Approximate integration of rapidly oscillating integrals*
9.	**Shadimetov Kh. M., Jabborov Kh. Kh.** *An extremal function for a quadrature formula with Hilbert kernel*
10.	**Shadimetov Kh. M., Karimov R. S.** *The Wiener-Hopf type system of equations for coeffi cients of optimal diff erence formulas in the Hilbert space*
11.	**Shadimetov Kh. M., Shonazarov S. K.** *Coefficients of the explicit optimal difference formulas*
12.	**Shadimetov Kh. M., Tursunmuradov S. T.** *Calculation of integrals of rapidly oscillating functions by the method of periodization of functions*
13.	**Shadimetov Kh. M., Usmanov Kh. I.** *Approximation of operators with power-logarithmic kernels*
14.	**Uzakov Z.** *Estimation of asymptotic complexity of the bubble method algorithm*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 1

SECTION 4. DIFFERENTIAL EQUATIONS AND EQUATIONS OF MATHEMATICAL PHYSICS. INVERSE AND ILL-POSED PROBLEMS

Chairmans: Akademician A. Azamov, Prof. M. Jenaliyev

Secretary: M. Rasulov
Time: October 22, 2024 at 14:00-18:30
V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan, 4th floor, 401-auditorium.
Zoom address of the conference for section session:
https://us06web.zoom.us/j/8040391623
Conference ID: 804 039 1623

№	Authors and Titles
1.	**Asanov A., Asanov R. A., Asanova K. A**. *On a class of systems of nonlinear Fredholm integral equations of the third kind on the segment*
2.	**Bekbauova A.U.** *Application of Dzhumabayev's method for solving initial-boundary value problems for systems of first-order partial differential equations*
3.	**Imanchiyev A. E.** *Solution to a multi-point boundary value problem for third-order differential equation*
4.	**Koilyshov U. K., Beisenbayeva K. A.** *Solution of initial-boundary value problems for the heat equation with discontinuous coefficients, in the case of two discontinuity points*
5.	**Kosmakova M. T., Akhmanova D. M., Izhanova K. A.** *Solving a boundary value problem for an equation with a fractional derivative and a load in the form of a fractional integral*
6.	**Kozhanov A. I.** *Hyperbolic and quasihyperbolic equations with degeneracy*
7.	**Lakshmi K. M., Pradeep G. Siddheshwar** *Linear and nonlinear Brinkman-B´enard convection of Newtonian liquid confined in cylindrical/rectangular enclosures*
8.	**Manat A. M., Orumbayeva N. T., Agataeva A. A.** *On the solution of a nonlocal boundary value problem for a pseudoparabolic equation of the third order*
9.	**Mukhambetkaliyev M. B.** *Inverse source problem for pseudoparabolic equation with memory*
10.	**Myrzakulova Zh. R., Yesmakhanova K R., Myrzakulov R.** *Solutions of Camassa-Holm and Generalized Heisenberg ferromagnet equations with self-consistent sources*
11.	**Sartabanov Zh., Omarova B., Zhumagaziyev A.** *Multiperiodic solutions of linear Hamiltonian systems by a diagonal differentiation operator defined on a cylindrical manifold*
12.	**Shakir A. G.** *Inverse problem for parabolic equation with p-Laplacian and damping term*
13.	**Shazyndayeva M.** *An inverse problem for fractional nonlinear pseudoparabolic equation*
14.	**Siddheshwar P.G.** *A new type of heat equation to study natural convection in a fluid-saturated porous medium*
15.	**Smadiyeva A. G.** *Decay estimates for the linear and nonlinear time-fractional differential equations*
16.	**Tobakhanov N., Torebek B.** *On the critical behavior for inhomogeneous semilinear biharmonic heat equations on exterior domains*
17.	**Torebek B. T.** *Global existence and blow-up of solutions to the porous medium equation*

18.	**Tulakova Z.R.** *Multiple hypergeometric Lauricella function with the applications to the solving of boundary value problems for a singular multidimensional elliptic equation in an infinite domain*
19.	**Tverdyi D. A., Makarov E. O., Parovik R. I.** *Restoration of the values fractional derivative variable order in the heredity mathematical model of the volumetric radon activity on the basis of data from Kamchatka monitoring points*
20.	**Abdullayev A.Kh.** *An explicit estimate for approximate solutions of ODEs based on the Taylor formula*
21.	**Akhundov A.Ya.** *Inverse problems for some systems of parabolic equations*
22.	**Apakov Yu. P., Hamitov A. A.** *Boundary value problem for a third-order inhomogeneous equation with multiple characteristics in three-dimensional space*
23.	**Apakov Yu. P., Melikuzieva D. M.** *Solution of a boundary problem for a fourth order equation with lower terms by the method of constructing the green function*
24.	**Arzikulov Z.O.** *Particular solutions of the three dimensional singular ultra-hyperbolic equation with the parameter*
25.	**Zholdoshova Ch. B., Ashirbaeva A.Zh.** *Applying of the method of additional argument to partial integro-differential equations of the fourth order with many spatial variables*
26.	**Ashurov R. R.** *On systems of fractional nonlinear partial differential equations*
27.	**Ashyralyev A., Durdiev D. K.** *Kernel identification problem for a parabolic integro-differential equation in a Banach space*
28.	**Assanova A. T., Minglibayeva B. B.** *Identification parameter problem for system of hyperbolic equations with discrete effect memory*
29.	**Babajanov B. A., Atajonov D. O.** *Integration of the generalized Camassa-Holm equation in the class of periodic functions*
30.	**Babadjanova A. K., Komuljanova Z. E.** *Short-pulse equation with an integral type source*
31.	**Babaev S., Bekmamatov Z. M.** *On the Conjugation Problem for a Class of Composite and Hyperbolic Type Fourth-Order Equations*
32.	**Babajanov B. A., Sadullayev Sh. O., Ruzmetov M. M.** *Integration of the Kaup-Boussinesq system with an additional term in the class of decreasing functions*
33.	**Baltaeva I. I., Babadjanova A.K., Atanazarova Sh. E.** *Inverse scattering transform for the negative order modified Korteweg-de Vries equation with a source*
34.	**Baltaeva U. I., Egamberganova Z. A., Hayitbaev H.Sh.** *The well-posed problem for the integro-differential heat equation with variable coefficients*
35	**Bekiev A.B., Otarova J.A.** *On the solvability of an inverse problem for a fourth-order equation*
36.	**Borikhanov M. B.** *Qualitative properties of solutions to a nonlinear fractional diffusion equation*
37.	**Durdiev U. D.** *Inverse problem for a fourth-order differential equation with a fractional Caputo operator*
38.	**Durdiev U. D., Jumayeva M. R.** *The inverse problem of kernel definition in the integro-differential equation of beam vibrations*
39.	**Durdiev U. D., Odinaev R. R.** *Inverse problem of finding the right-hand side in a fourth-order differential equation*
40.	**Durdiev U. D., Turdiev H. H.** *An initial boundary value problem for the fractional wave equation with the generalized Riemann-Liouville time derivative*
41.	**Durdiev U. D., Turdiev H. H.** *Determining of a space dependent coefficient of fractional wave equation with the generalized Riemann-Liouville time derivative*
42.	**Dzhamalov S. Z., Khalkhadzhaev B.B., Yusupov Sh.B.** *On smoothness solution of a nonlocal boundary problem of periodic type for a mixed type equation of the second kind of the fourth order*

43.	**Dzhamalov S. Z., Khudoykulov Sh. Sh.** *Two-Point Inverse Problem for a Three-Dimensional Heat Equation with Cauchy Conditions*
44.	**Dzhamalov S. Z., Turakulov Kh. Sh.** *On a periodic boundary value problem for the three-dimensional Chaplygin equation in an unbounded parallelepiped*
45.	**Dzhamalov S. Z., Sipatdinova B. K.** *On a Nonlocal Boundary Value Problem for a Three-Dimensional Mixed-Type Equation of the Second Kind in an Unbounded Parallelepiped*
46.	**Dzhamalov S.Z., Shokirov A.A.** *About a coefficient inverse problem with periodic type nonlocal boundary condition for three-dimensional Tricomi equation in a parallelepiped*
47.	**Elmuradova H. B.** *An inverse problem for the multi-dimensional pseudo parabolic integro-differential equation*
48.	**Ergasheva S. B., Kurbannazarova M. T.** *Problem with combined local and nonlocal conditions on one boundary characteristic for one class of equations of mixed type*
49.	**Fayazov K.S., Rahimov D.I.** *Boundary Value Problems for Sobolev Type Equations of Mixed Type*
50.	**Hasanov A., Yuldashova H. A.** *Cauchy problem for the time-fractional diffusion equation*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 2

SECTION 4. DIFFERENTIAL EQUATIONS AND EQUATIONS OF MATHEMATICAL PHYSICS. INVERSE AND ILL-POSED PROBLEMS

Chairmans: Prof. K. Fayazov, Prof. J. Tokhirov
Secretary: M. Rasulov
Time: October 23, 2024 at 14:00-16:00
V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan, 4 th floor, 401-auditorium.
Zoom address of the conference for section session:
https://us06web.zoom.us/j/8040391623
Conference ID: 804 039 1623

№	Authors and Titles
1.	**Hoitmetov U. A., Sobirov Sh. K.** *On finding a solution to the Cauchy problem for the loaded modified Korteweg-de Vries equation with a self-consistent source in the case of moving eigenvalues*
2.	**Imanberdiyev K., Kassen M., Yergaliyev M.** *Inverse problems for the Burgers equation in degenerate domains*
3.	**Imomnazarov B. Kh., Imomnazarov Kh. Kh., Mukimov A. K., Turdiev U. K.** *On a one-dimensional inverse problem for the Hopf equation*
4.	**Jenaliyev M. T., Serik A. M., Yergaliyev M. G.** *On the solvability of the boundary value problem for a 3-D linearized system of Navier-Stokes equations in a cone*
5.	**Juraev D. A., Mammadzada N. M.** *On the Cauchy problem for the Helmholtz equation on the plane*
6.	**Kadirkulov B. J., Jalilov M. A.** *On a nonlocal problem for a mixed-type equation with a fractional order operator*
7.	**Kadirkulov B. J., Begimqulov F. X.** *On a nonlocal problem of Bitsadze-Samarskii type for an elliptic equation with degeneration*
8.	**Karimov E. T., Khasanov Sh.** *On a bi-ordinal Hilfer-Katugampola fractional order integro-differential operator*
9.	**Karimov K. T., Murodova M. R**. *Boundary value problem of Dirichlet type of an elliptic equation with three singular coefficients in the first octant*
10.	**Kerimbekov A. K., Baetov A. K.** *Synthesis of uniformly distributed control in nonlinear optimization of wave processes*
11.	**Khasanov A. B., Ermamatova F. E.** *Carleman's formula for the generalized Cauchy-Riemann system in a unbounded domain*
12.	**Khasanov M. M., Ganjaev O. Y.** *Travelling wave solutions for the loaded modified Korteweg-de Vries equation with variable coefficients using the generalized (G'/G)-expansion method*
13.	**Khajiev I. O., Shobdarov E.** *Conditional well-posedness of the initial-boundary value problem for the parabolic equation with variable coefficients*
14.	**Khudayberganov Y. K., Orinbayev A. A.** *Conditional correctness and regularization of an initial-boundary value problem for a system of nonhomogeneous parabolic type equations with two degenerate lines*
15.	**Komilova N.J.** *Regular solution of the Cauchy problem for a second kind hyperbolic equation with two identical orders of degeneracy*
16.	**Kurbanbaev O. O., Djakaeva K. D.** *Cauchy-type functions for linear diff erential equations*

17.	**Kurbonov O. I., Akhralov H. Z.** *About the negative eigenvalues of the discrete Schrodinger operator with non-local potential in d-dimensional case*
18.	**Mamazhonov S. M.** *Boundary value problem for a fourth-order inhomogeneous equation with variable coefficients in a rectangular domain*
19.	**Mambetov S. A.** *Initial-boundary value problems to the time-space nonlocal diffusion equation*
20.	**Mirsaburov M., Allakova Sh. I.** *An analogue of the Zhegalov problem with data on internal characteristics for a mixed-type equation with a singular coefficient*
21.	**Mirsaburova U., Karshiyeva M.** *A problem with a displacement on the intern al characteristics in an unbounded domain for the Gellerstedt equation with singular coefficients*
22.	**Mirsaburov M., Mamatmuminov D. T.** *About an analogue of the problem with the Bitsadze-Samarsky condition on the degenerity segment and the internal segment parallel to it, for one class of degenerate hyperbolic equations*
23.	**Muratbekov M.B., Muratbekov M.M.** *Estimates of Approximation Numbers and Completeness of Root Vectors of a Singular Operator Generated by the Linear Part of the Korteweg-de Vries Operator*
24.	**Mustapokulov Kh.Ya., Mamadaliev N.A.** *Construction of P-strategies in a simple evasion game with impulse control*
25.	**Nurjanova A. O.** *On the approximate solution of a boundary value problem for systems of integro-differential equations of the Fredholm type*
26.	**Oripov D. D.** *Nonlocal Initial-Boundary Value Problem for a Partial Differential Equation of High Even Order Degenerating on the Boundary of the Domain*
27.	**Otakulov S., Haydarov T. T.** *On the non-smooth optimization problem for dynamic control system under conditions of uncertainty*
28.	**Otakulov S., Rahimov B. SH.** *About the property of locally relative controllability of a differential inclusion*
29.	**Rahmonov A. A.** *An inverse source problem for a fractional diffusion-wave equation*
30.	**Ramazanov M. I., Gulmanov N. K., Omarov M. T.** *Solving a singular integral equation of the Volterra type for heat conduction problems*
31.	**Rasulov M. S.** *The Stefan problem for competitive reaction-diffusion system*
32.	**Rozimatov J. A., Murodova Sh. I.** *Conditional stability of the initial-boundary value problem for parabolic equation with changing direction of time*
33.	**Saparbayev R. A**. *Cauchy problem for fractional telegraph equation with Caputo operator*
34.	**Sattorov E. N., Ermamatova Z. E.** *On a three dimensional Cauchy problem for inhomogeneous Helmholtz equation in bounded domain*
35.	**Sattorov E. N., Pulatov O. U.** *Analytical forms of the Cauchy-type representation of the gravity field and its gradients*
36.	**Suyarov T. R.** *Inverse problems of determining the right-hand side for a one-dimensional wave equation*
37.	**Talipova M.Zh.** *Investigation of normal solutions for a nonhomogeneous system of partial differential equation*
38.	**Turdiev Kh. N., Usmonov D. A.** *Initial-boundary value problem for generalized telegraph equation with the Prabhakar operator*
39.	**Umarov R. A.** *On the completeness of eigenfunctions of a boundary value problem with non-symmetrical conditions for a third-order equation*
40.	**Urinov A. K., Mamanazarov A. O.** *An initial boundary value problem for a fourth-order partial differential equation that degenerates on the boundary of the domain*
41.	**Urinov A. K., Mirsaburova D. M.** *Gellerstedt-Moiseev problem with data on parallel characteristics for a mixed type equation*
42.	**Utebaev D., Kalmuratova S.** *On convergence of centered difference schemes for a system of first-order hyperbolic equations*
43.	**Zunnunov R. T., Ergashev A. A.** *Tricomi problem for a mixed-type equation of the second kind in a domain, the elliptic part of which is a horizontal half-strip*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 1

SECTION 6. MATHEMATICAL ANALYSIS AND ITS APPLICATIONS

Chairmans: Prof. F. Abdullayev, Prof. B. Shoimkulov
Secretary: R. Ergashev
Time: October 22, 2024 at 14:00-18:30
National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 3rd floor, 304 – auditorium.
Zoom address of the conference for section session:
https://us02web.zoom.us/j/8022228888?pwd=b3M4cFJxUHFnZnpuU3kyWW8vNzg0QT09
Conference ID: 80 2222 8888
Pass code: 1

№	Authors and Titles
1.	**Abdikadirov S.M.** *The Osgood-Brown theorem for α−separately harmonic functions*
2.	**Abduganiyeva O. I., Sayfullayeva M. Z.** *Adaptive combined control with identification*
3.	**Abdullayev F.G., Imashkyzy M.** *Approximation properties of some extremal polynomials in the integral and uniform metrics*
4.	**Akbaraliyeva M. SH., Ne'matillayeva M.D.** *Carleson's Interpolation Theorem in classical domain of type second*
5.	**Akramov N.S, Rakhimov K.Kh** *Capacity dimension of the Brjuno set in* C^n
6.	**Atamuratov A. A.** *Extremal functions on parabolic manifolds and regular compacts*
7.	**Atamuratov A. A., Bekchanov S. E.** *Growth order of holomorphic functions on parabolic Stein manifolds*
8.	**Bakhriddinova H.U.** *Theorem for Weistrass formula*
9.	**Bazarbaev S.U., Boymurodov S.I.** *Large entropy measures of Henon-like maps*
10.	**Bazarbaev S.U.** *On the support of measures of large for polynomial-like maps*
11.	**Bobokhonov Sh.S.** *The corona theorem for A(z)-analytic functions*
12.	**Davlatov Sh. O.** *Some signs of convergence of constant-sign numerical series and improper integrals*
13.	**Gadayev S.A.** *Differentiability of potentials in the sense of Zygmund*
14.	**Ganikhodzhaev R. N.., Eshmamatova D. B., Akhmedova D. P., Muminov U. R.** *Linear homogeneous inequalities and routes of trajectories of Lotka–Volterra operators*
15.	**Husenov B. E.** *Nevanlinna-Ostrovsky class for A(z)–analytic functions*
16.	**Imomkulov S.A., Tuychiev T.T.** *On the continuation of the Hartogs series with harmonic coefficients*
17.	**Kamolov X. Q.** *Some properties of the Green's function on parabolic analytic surfaces*
18.	**Karimov J.J.** *Limit behavior of the distribution function for circle homeomorphisms*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 2

SECTION 6. MATHEMATICAL ANALYSIS AND ITS APPLICATIONS

Chairmans: Prof. E. Nursultanov, Prof. B. Shoimkulov
Secretary: R. Ergashev
Time: October 23, 2024 at 14:00-16:00
National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 3rd floor, 304 – auditorium.
Zoom address of the conference for section session:
https://us02web.zoom.us/j/8022228888?pwd=b3M4cFJxUHFnZnpuU3kyWW8vNzg0QT09
Conference ID: 80 2222 8888
Pass code: 1

№	Authors and Titles
1.	**Kuldoshev K.K.** *$(m, \psi)-$ regularity of boundary compacts*
2.	**Khudayarov S.S.** *About dynamic systems of a QnSO*
3.	**Mahkamov E.M., Bozorov J.T.** *Carleman's formula for a second kind matrix polydisk*
4.	**Muminov K.K.** *Equivalence of paths with respect to group action $R^4 \triangleleft H(R^4)$*
5.	**Ne'matillayeva M.D., Rustamova M.S.** *Analog of the Carleson's interpolation theorem for A (z)-analytic functions*
6.	**Nursultanov E.D., Tleukhanova N.T.** *Recovery operator of periodic functions from the spaces SH_p^α, WH_p^α*
7.	**Rahmatullaev M.M., Tukhtabaev A.M.** *Weakly periodic **p**-adic quasi Gibbs measures for the Potts model on a Cayley tree*
8.	**Rajabov Sh.Sh.** *The double convolution theorem for symmetric matrix argument functions*
9.	**Rasulov K.K.** *Continuation of separately analytic functions with thin singularities in each section*
10.	**Rasulova M.A., Hakimova M.A.** *H_A-periodic ground states for the Chui-Weeks's model on the Cayley tree of order two*
11.	**Sadullaev A., Ismoilov M., Sharipov R.** *Capacity of condenser C(E,D) in the class m-convex functions*
12.	**Safarov U.A.** *Conjugations of critical circle homeomorphisms with break type of singularities*
13.	**Satlikov G.R.** *Removable singularities of bounded separately-subharmonic functions with respect to groups of variables*
14.	**Sayidov O.Zh.** *Study of the existence of an integral manifold for controllable systems of linear differential equations with lagging argument*
15.	**Sharipov R.A., Axmedov Q.Y.** *m-plurisubharmonic functions and its properties*
16.	**Sharipov R.A., Ismoilov M.B.** *Polar sets of m-convex functions*
17.	**Shoimkulov B.A., Kutlimuratov B.J.** *On the Multivariate Morera Boundary Theorem for Integrable Functions*
18.	**Tishabaev J.K., Tuychiyev T.T., Mardanov A.P.** *On the domains of the existence of multidimensional lacunary Hartogs series with Ostrovsky lacunae*
19.	**Yakhshiboev M.U., Narzullaev U.Kh.** *On boundedness of fractional ψ-Riemann-Liouville integration in Morrey spaces*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 1

SECTION 8, 9. COMPUTATIONAL LINGUISTICS, INFORMATION TECHNOLOGIES IN EDUCATION

Chairmans: Prof. N. Arkabayev, Prof. N. Abdurakhmonova
Secretary: A. Mamatov
Time: October 22, 2024 at 14:00-18:30
National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 2nd floor, 221-auditorium.
Zoom address of the conference for section sessions:
https://us06web.zoom.us/j/3064586428?pwd=dkVu6bsVgPcYEFNGXMtwD6fk0u8X8s.1&omn=83723506777
Conference ID: 306 458 6428
Pass code: 2024

№	Authors and Titles
1.	**Mariani J.** *The Quest for Language Resources in a Multilingual World*
2.	**Paroubek, P., Cortal, G., Finkel A., Ye L.** *On language and emotion modeling*
3.	**Abdurakhimov B. F., Khodiev Sh. I.** *Statistical methods and mathematical modeling in psychology*
4.	**Abdurakhmanova Sh. A., Mukhammadiev F. G.** *Stages of development of students' digital linguistic construction abilities in teaching "Information technologies in education"*
5.	**Akhrarov B.S.** *Organizing independent work of students in the discipline digital and information technologies*
6.	**Alimjanova D.** *Problems of transferring asymmetric algorithms to elliptic curves*
7.	**Allaberdiev B. B.** *Softmax function in a self-attention mechanism*
8.	**Allaberganova G. M. A** *Comparative Study of Traditional vs. Neural Approaches to Part-of-Speech Tagging in Uzbek*
9.	**Amanbayeva R. X.** *Towards Developing an Open-Source Uzbek Stemming Resource for NLP Applications*
10.	**Aripov M., Matlatipov S.G'.** *The Uzbek Web Treebank: Annotating Uzbek for Enhanced NLP Applications*
11.	**Aripov M.M., Norov A.M., Tagaev I.B.** *The phoneme-grapheme relationship in Uzbek language*
12.	**Arkabaev N. K.** *Effectiveness of Mobile Applications in Teaching the Python Programming Language*
13.	**Babakhodjaeva N.M.** *Prospects and ethical aspects of using artificial intelligence in higher education*
14.	**Jumanazarov M. D.** *BERT-Based Approaches to Addressing NLP Tasks for Uzbek Language*
15.	**Karimov I. K., Kobilov S. S.** *Problems in conversion numbers to text for TTS in Uzbek language*
16.	**Khabibulla M. A., Khajibaeva S. M.** *Automatic extraction of Uzbek basis words from "Uzbek Primary School Corpus"*
17.	**Kholbozorov K.** *Working with vectors using the "GeoGebra" program*
18.	**Kholiyorov M.** *Application of modern mobile devices in the educational process and its advantages*

19.	**Kobulova M. A., Mamatkulova M. Sh**. *Development and application of online adaptive systems in modern education*
20.	**Kurbanova M.M., Sulaymanova D.N.** *The Position of Linguistic Structural Expanders in Compound Sentences*
21.	**Kuriyozov E. R., Matlatipov S. R., Rajabov J. Sh., Aripov M. M., Kurbanova M. M., Carlos G.R. UzUDT:** *Creation of the Large Annotated Uzbek Universal Dependency Treebank*
22.	**Kuriyozov E. R., Matlatipov S. R., Rajabov J. Sh., Aripov M. M., Kurbanova M. M., Carlos G.R.** *Leveraging Turkic Language Resources to Develop the UzMAP UD Treebank for Uzbek*
23.	**Kutlimuratova B. Kh., Urazbayev A. D., Rakhimova G. Y., Kuriyozov E. R.A** *Computational Approach to Analyzing Errors in Uzbek EFL learners*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 2

SECTION 8, 9. COMPUTATIONAL LINGUISTICS, INFORMATION TECHNOLOGIES IN EDUCATION

Chairmans: Prof. N. Abdurakhmonova Dots. Kh. Madatov
Secretary: A. Mamatov
Time: October 23, 2024 at 14:00-16:00
National university of Uzbekistan, Faculty of Applied mathematics and intellectual Technologies, 2nd floor, 221-auditorium.
Zoom address of the conference for section sessions:
https://us06web.zoom.us/j/3064586428?pwd=dkVu6bsVgPcYEFNGXMtwD6fk0u8X8s.1&omn=83723506777
Conference ID: 306 458 6428
Pass code: 2024

№	Authors and Titles
1.	**Latipov N.Q., Makharov T.A., Makharov K.T.** *On the use of artificial intelligence in conducting scientific activities*
2.	**Madatov Kh.A., Sattarova S.B.** *Interpretation of text similarity algorithms to the Uzbek language*
3.	**Makharov T.A., Latipov N.Q.** *Modern information technologies in the educational system*
4.	**Mamatkulova M.Sh. S., Kobulova M.A.** *Development of adaptive distance learning courses*
5.	**Matlatipov S. G, Rajabov J. Sh.** UzABSA: *A Comprehensive Aspect-Based Sentiment Analysis Dataset for the Uzbek Language*
6.	**Matlatipov S. G, Rajabov J. Sh.** *UzABSA: The First Annotated Aspect-Based Sentiment Analysis Dataset for the Uzbek Language*
7.	**Musaev M. M., Turaev. B. Sh.** *Syntactic Analysis in Natural Language Processing for Uzbek language*
8.	**Najmiddinova X.Y**. *Capabilities of an e-learning platform for teaching programming to children aged 7-11 years*
9.	**Nazirova E. SH., Boymurodov F. F., Muhiddin M.** *Program for grammatical editing of Uzbek word structures*
10.	**Otahanov N.A.** *The methodology of teaching the theme "Studying the graphical capabilities of the C# programming language" based on modular technology*
11.	**Rakhmonkulov F.P., Abdug'aniyev B. B.** *Methodology for the development of step by-step tasks in laboratory classes*
12.	**Rasulmuhammedov M. M., Uralov N. B.** *Project for creating a website to automate the work of a school director*
13.	**Rustamova D. Q.** *Leveraging Recurrent Neural Networks for Uzbek Phrase Analysis*
14.	**Settiyev Sh.R.** *The Place and Role of Mathematics in the Humanities*
15.	**Sharipov M., Sobirov O., Kuriyozov E.** *UzbekVerbLemma: Developing a dictionary-based algorithm for finding lemmas of Uzbek verbs.*
16.	**Tillaev A.I.** *Improving the teaching of "computer graphics" by using multimedia technologies*

17.	**Toshboyev S. M.** *Use of innovative technologies in teaching computational methods in higher education institutions*
18.	**Tulaganov Z.Sh.** *Features of distance education*
19.	**Ubaydullayeva G. O.** *Models of using information technologies in inclusive education*
20.	**Umaralieva D. U.** *Using proof assistants as a tool in teaching Calculus*
21.	**Xaydarov A.T., Akmalova A.N.** *Development of intellectual potential students in the development of higher education*
22.	**Xolmurodov A. E., Matanov M.Ch. M., Quzratov M. A.** *Deterministic excitation model compatible with a free field seismic record*
23.	**Yusupova Z.O.** *Analysis of Contextual Word Representations for Uzbek Language Texts*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 1

SECTION 10, 11. ALGEBRA, GEOMETRY AND FUNCTIONAL ANALYSIS, THEORY OF PROBABILITY AND MATHEMATICAL STATISTICS

Chairmans: Prof. A. Khudayberdiyev, Prof. O. Sharipov
Secretary: Q. Abdurasulov
Time: October 22, 2024 at 14:00-18:30
V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan, 1 st floor, 105-auditorium.
Zoom address of the conference for section sessions:
https://us06web.zoom.us/j/3836418273
Conference ID: 383 641 8273
Pass code: 1

№	Authors and Titles
1.	**Ekrem Savaş** *Lacunary strong invariant summability of weight g on seminorm space*
2.	**Sadovskaya O.S**. *Weakly compact embedding of Lorentz and Marcinkiewicz operator spaces*
3.	**Salimov Arif.** *Problems of Lifts in Bundles*
4.	**Aralova K.A.** *On eigenvalues of some stochastic operators*
5.	**Ayupov Sh.A**. *Local and 2-Local Derivations on Octonion and Malcev Algebras*
6.	**Beshimov R. B., Manasipova R. Z**. *On some properties of the space of τ-continius mappings*
7.	**Boboqulova M.A.** *Dynamics of composition of Lotka–Volterra type quadratic operators in* S^3
8.	**Bozorova S.N.** *Symmetric Leibniz algebras whose underlying Lie algebra is an upper triangular matrix*
9.	**Chilin V., Zakirov B.** *The symmetric space Orlicz-Kantorovich*
10.	**Eshmirzayev Sh.Sh., Bekbaev U.** *On derivations of two-dimensional algebras over any basic field*
11.	**Fayzullayev J.I.** *Different interpretations of the geometric meaning of the exact integral*
12.	**Ibragimov M. M., Arziev A. D.** *Properties of geometric Peirce decompositions of facially symmetric spaces*
13.	**Jamilov U.U**. *Regularity of a quadratic stochastic operator*
14.	**Jamilov U.U. Baratov B.S.** *The dynamics of a separable cubic operator*
15.	**Karimov U. Sh.** *Local derivations of real AW*-algebras*
16.	**Khakimov R. M., Bozorqulov A. A.** $k_0^{(m)}$ *-periodic Gibbs measures for one fertile HC model*
17.	**Kim D. I., Rakhimov A. A.** *On real non W*-, AW*-algebras*
18.	**Kucharov R. R., Navruzova L. I.** *Efimov's effect for partial integral operators of Fredholm type*
19.	**Kucharov R. R., Obidova K. I**. *About solution of homogeneous Fredholm partial integral equation with degenerate kernel*
20.	**Gafurov M. U., Kendjayev R. Kh., Azimov J. B.** *Stochastic analysis in experimental planning problems*

21.	**Khamdamov I.** *On Properties of the Vertex Process of a Convex Hull Outside a Unit Circle on a Plane*
22.	**Khudoyberdiev Kh. O.** *The asymptotical behavior of trajectories of a non-Volterra quadratic operator*
23.	**Kurbanova D.** *Matrix algebra and finite-dimensional C*-algebras*
24.	**Mamadaliyev N.K, Toshbuvayev B.M.** *On the impact of the functor of probability measures on almost-open mappings*
25.	**Meyliev Sh. U., Akhmedov M. I.** *Local τ-density and local weak τ-density of modification of the Niemytzki plane*
26.	**Toshmatov Sh.A., Giyasov S.A.** *The Role and Importance of Assessing the Tax Potential of Regions in Modern Conditions*

9th International Conference "Actual Problems Of Applied Mathematics And Information Technologies Al-Khwarizmi 2024", October 22-23, 2024

PROGRAM OF THE CONFERENCE

Session Day 2

SECTION 10, 11. ALGEBRA, GEOMETRY AND FUNCTIONAL ANALYSIS, THEORY OF PROBABILITY AND MATHEMATICAL STATISTICS

Chairmans: Prof. A. Khudayberdiyev, Prof. O. Sharipov
Secretary: Q. Abdurasulov
Time: October 23, 2024 at 14:00-16:00
V.I. Romanovsky Institute of Mathematics of the Academy of Sciences of Uzbekistan, 1 st floor, 105-auditorium.
Zoom address of the conference for section sessions:
https://us06web.zoom.us/j/3836418273
Conference ID: 383 641 8273
Pass code: 1

№	Authors and Titles
1.	**Mirakhmedov Sh.** *Asymptotic behavior of sum-functions of m-tuples of uniform spacings*
2.	**Muhamedov A. K.** *Asymptotical properties of the estimator of two-dimensional distributions from stationary of positively quadrant dependent random fields*
3.	**Mukhamadiev F.G.** *On the path in the space of thin complete linked systems*
4.	**Okhunova M. O.** *On a family of Volterra cubic stochastic operators*
5.	**Rahmatullaev M. M., Abdukaxorova Z. T.** *Phase transitions for p-adic Ising model with an external field on the Cayley tree*
6.	**Rahmatullaev M. M., Samijonova N. T. The** *Gibbs measures for 3-state Potts model with an external field on the Cayley tree*
7.	**Rajabov S.M.** *On dynamics of a non-Volterra quadratic stochastic operator on* S^2
8.	**Rakhimov A.A., Chepukhalin S.A.** *All real AW*-factors are normal*
9.	**Rakhmatullayev M. M., Akhmedov O. U.** *Construction of p-adic quasi Gibbs measures for the SOS model*

10.	**Rakhmonov Z.R., Berdiev G.R.** *The concept of fractal dimension and the issue of geometric modeling of complex fractal structures*
11.	**Rakhmonova N. V.** *Normality of quasitrace on real C*-algebras*
12.	**Rasulova M.A., Hakimova M.A.** *H_A -weakly periodic ground states for the Chui-Weeks's model on the Cayley tree of order two*
13.	**Ruzieva D. S.** *Law of large numbers for Hilbert space-valued random fields*
14.	**Sadigova S.R., Ismailov N.A., Mirzabalayeva A.I.** *On the basicity of double system of exponents in the weighted Lebesgue space*
15.	**Seidullaev A. K., Maksatov S. M. Integral geometry problem in the family of broken lines with a weight function x − ξ**
16.	**Seidullaev A. K., Yusupov M. A.** *The inversion formula of a problem in the family of broken lines taken along a vertical section of integral geometry and its application in dental tomography*
17.	**Seypullaev J.X., Kalenbaev K.B.** *Linear isometry on reflexive strongly facially symmetric spaces*
18.	**Sharipov A.S., Topvoldiyev F.F.** *On the convergence of convex surfaces by sections*
19.	**Sharipov O. Sh., Kobilov U. X.** *Limit theorems for weakly dependent random variables with values in stable type p Banach spaces*
20.	**Sharipov O. Sh., Muxtorov I. G'.** *An invariance principle for weakly dependent random variables with values in type 2 Banach spaces*
21.	**Sheraliyeva S.A., Khudoyberdiyev A.Kh.** *Extension of solvable Leibniz algebras with null-filiform nilradical*
22.	**Umarova Z.B.** *Basis of open-point topological spaces* $\mathbf{C}_h\ (\mathbf{X}, \mathbf{Y})$
23.	**Yusupov B.B., Atajonov X.** *Local and 2-local* $\frac{1}{2}$ *-derivations on solvable Lie algebras with a filiform nilradical*
24.	**Yusupova A. K.** *Enhancing the logical reasoning abilities of students through the instruction of probability theory and mathematical statistics*
25.	**Zakirova G.B.** *On p-convexification of the Banach-Kantorovich space over a ring of measurable functions*
26.	**Zhuraev T. F., Tursunova Z. O., Zhuvonov K. R.** *Homotopy dense subsets of compact sets of the form* $F(X)$

Conference partners: ***Nordic International University,***

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Turkic World Mathematical Society