PROGRAM

**of the International Conference
"Computational and Informational Technologies
in Science, Engineering and Education"**

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September, 24-27, 2015
Almaty, Kazakhstan

PROGRAM

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"Computational and Informational Technologies in Science, Engineering and Education"

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Sergei Turitsyn	Aston university, Great Britain
Lian-Ping Wang	University of Delaware, USA
Ziyaviddin Yuldashev	National University of Uzbekistan named by after Mirza Ulugbek, Uzbekistan

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PROCEDURE OF THE CONFERENCE
(Program Overview)

Time Limit:
20-25 minutes for speakers at the Plenary Session including a discussion
10-15 minutes for speakers at Section Sessions including a discussion

Thursday, 24 September 2015

Arrival of the congress participants. International participants will be met at the airport. Checking-in at a hotel.

Friday, 25 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics, Block 10, Red Hall

07.30-08.00	Private breakfast
08.00-08.30	Departure of international participants from the hotel to the Department of Mechanics & Mathematics
08.30-09.00	Registration of the Conference participants
09.00-09.30	Opening Ceremony

Rector of Al-Farabi KazNU, academician Galimkair M. Mutanov opens the Conference.

A welcoming speech of the director of the Institute of Computational Technologies SB RAS, academician Yurii I. Shokin.

A welcoming speech of the professor Kyrgyz State Technical University named after I. Razzakov, academician Amanbek J. Jaynakov.

A welcoming speech of the professor of the University of Pristina in Kosovska Mitrovica Hranislav Milosevic.

09.30-10.50	The First Plenary Session
10.50-11.20	Coffee break
11.20-12.20	The First Plenary Session
12.30-14.30	Lunch
14.30-16.00	Section Sessions
16.00-16.30	Coffee break
16.30-18.30	Section Sessions
19.00	Conference banquet

Saturday, 26 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics, Block 10, Red Hall

08.00-09.30	Private breakfast
09.30-10.00	Departure of international participants from the hotel to the Department of Mechanics & Mathematics
10.00-11.00	The Second Plenary Session
11.00-11.30	Coffee break
11.30-13.00	The Second Plenary Session
13.00-14.00	Lunch
14.00-16.00	Section Sessions
16.00-16.30	Coffee break
16.30-18.00	Section Sessions
18.00-18.30	Closing Ceremony. Red Hall
19.00	Farewell coctail

The training seminar «Modern programming models using newest Intel software and hardware tools» within the framework of the Conference

10.00-17.00	Department of Mechanics & Mathematics, Room 201

Sunday, 27 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics

08.00-08.30	Private breakfast
08.30-09.00	Departure of international participants from the hotel to the Department of Mechanics & Mathematics
09.00-15.00	Cultural Program.

Departure of Participants

CONGRESS SCHEDULE

Thursday, 24 September 2015	
Guests arrival	
Friday, 25 September 2015	
08.30-09.00	Registartion of Participants. Al-Farabi KazNU, Department of Mechanics & Mathematics, Blok 10, Red Hall
09.00-09.30	Opening Ceremony. Red Hall.
09.30-10.50	The First Plenary Session. Red Hall.
10.50-11.20	*Coffee break*
11.20-12.20	The First Plenary Session. Red Hall.
12.30-14.30	*Lunch ."Ai-Tumar" Catering Hall (University Campus)*
14.30-18.30	Section sessions. Department of Mechanics & Mathematics of Al-Farabi KazNU

14.30-18.30 16.00-16.30 Coffee break	Section 1. High performance computing , room 213
	Section 2. Information management, processing and security, Block 10, room 3
	Section 3. Mathematical modeling of technological processes

Subsection 3.1 Red Hall	Subsection 3.2 Block 10, room 4	Subsection 3.3 Block 10, room 5	Subsection 3.4 Block 10, room 6

	Session 4. New information technologies in education, room 309
	Session 5. Technological process automation and control, Block 10, room 2
19.00	*Conference Banquet."Ai-Tumar" Catering Hall (University Campus)*

Saturday, 26 September 2015	
10.00-13.00 11.00-11.30 *Coffee break*	The Second Plenary Session. Department of Mechanics & Mathematics of Al-Farabi KazNU. Red Hall.
13.00-14.00	*Lunch."Ai-Tumar" Catering Hall (University Campus)*
14.00-18.00 16.00-16.30 Coffee break	Section sessions. Department of Mechanics & Mathematics of Al-Farabi KazNU.
	Section 2. Information management, processing and security. Block 10, room 3
	Section 3. Mathematical modeling of technological processes

Subsection 3.5 Red Hall	Subsection 3.6 Block 10, room 4	Subsection 3.7 Block 10, room 5

	Session 5. Computational Mathematics, Block 10, room 2
10.00-17.00	The training seminar «Modern programming models using newest Intel software and hardware tools» within the framework of the Conference. Department of Mechanics & Mathematics, room 201.
18.00-18.30	Closing Ceremony. Red Hall.
19.00	*Farewell Coctail. "Ai-Tumar" Catering Hall (University Campus)*
Sunday, 27 September 2015	
09.00-15.00	Cultural Program.
Departure of the Participants	

S E S S I O N S

Friday, 25 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics, Block 10, Red Hall

Opening Ceremony

09.00-09.30

1. **Session opening by the academician, Rector of Al-Farabi KazNU Galimkair M. Mutanov.**
2. **Welcoming speech by the director of the Institute of Computational Technologies SB RAS, academician Yurii I. Shokin.**
3. **Welcoming speech by the professor of the Kyrgyz State Technical University named after I. Razzakov, academician Amanbek J. Jaynakov.**
4. **Welcoming speech by the professor of the University of Pristina in Kosovska Mitrovica Hranislav Milosevic.**

The First Plenary Session

09.30-12.20

Chair: Yu.I. Shokin
Secretary: A. Kudaibergenov, Zh. Akhmetova

Lecturers:

09.30-09.50	**Bychkov I. V** Technologies of heterogeneous programming systems integration in the informational computing environment of mathematical modeling and data analysis *(Matrosov Institute for System Dynamics and Control Theory (ISDCT) of SB RAS, Irkutsk, Russia)*
09.50-10.10	**Peyman Givi.** Quantum Computing and Its Potential for Turbulence *Simulations (University of Pittsburgh Pittsburgh, Pennsylvania, USA)*
10.10-10.30	**Sergey Kabanikhin.** The size of the domain of measurements is the regularization parameter in continuation problem *(Institute of Computational Mathematics and Mathematical Geophysics SB RAS Novosibirsk, Russia)*
10.30-10.50	**Andreas Griewank.** Nonsmooth Numercis via Piecewise Linearization *(Humboldt University, Berlin, Germany)*

10.50-11.20	**Coffee break**

11.20-11.40   **Anvarbek M. Meirmanov.** Macroscopic Mathematical Models of Physical Processes in Porous Media via Microstructure (*Kazakh-British Technical University Almaty, Kazakhstan)*

11.40-12.00   **Simon Jayaraj.** Modeling and Simulation of Fluid Flow and Mixing in Micro Channels Using Immersed Boundary Method *(National Institute of Technology, Calicut, India)*

12.00-12.20   **Alexander V. Avdeev.** Intel software for solving research and industrial problems: Modern trends of high performance computing *(Software and Services Group, Novosibirsk, Russia)*

12.30-14.30	**Lunch**

Section Sessions

Section 1. High Performance Computing

Room 213

14.30-18.30
16.00-16.20   **Coffee break**

Chair: V.P. Ilyin
Secretary: A. Sergaliyev, A. Әldibekova

Lecturers:

1. **Bychkov I.V., Kochemazov S., Manzyuk M., Otpuschennikov I., Posypkin M., Semenov A., Zaikin O.** Solving Hard SAT Instances in Volunteer Computing Project SAT@home *(Institute for System Dynamics and Control theory of SB RAS, Irkutsk, Russia*)

2. **Ильин В.П.** О фундаментальных и технологических проблемах математического моделирования *(Институт вычислительной математики и математической геофизики СО РАН, Новосибирский государственный университет, Новосибирск, Россия)*

3. **Смагин С. И., Каширин А.А., Талтыкина М.Ю.** Численное решение трехмерных задач акустики с использованием мозаично-скелетонного метода *(Вычислительный центр ДВО РАН, Хабаровск, Россия)*

4. **Шорников Ю.В., Насырова М.С., Достовалов Д.Н.** Анализ режимного поведения гибридных систем параллельными одношаговыми методами (*Конструкторско-технологический институт вычислительной техники СО РАН, Новосибирск, Россия*)

5. **Baidaliyev A., Akhmedov D., Yelubayev S., Bopeyev T., Muratov D.** Development of control and diagnostic system of cluster hybrid computing system (*Institute of Space Technique and Technologies AALR, Almaty, Kazakhstan*)

6. **Bedelbaev A.A.** Computer mathematical and biochemical modeling and simulation of the life processes in human kidneys *(Research Institute of Mathematics and Mechanics, Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

7. **Daribaev B., Urmashev B.A** High-performance mobile computing of heat convection problems *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

8. **Karavaev D., Glinsky B., Kovalevsky V.** Scalable parallel algorithm for 3D seismic simulation on clusters with Intel Xeon Phi coprocessors *(Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia)*

9. **Masich G.F., Masich A. G., Shchapov V.A.** Distributed PIV: the Technology of Processing intensive experimental data-flow on a remote Supercomputer

(Institute of Continuous Media Mechanics UB RAS, Perm, Russia)

10. **Mukimbekov M.Zh, Baitulenov Zh.B., Nakibayeva M.T.** About one problem of oil production *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
11. **Mukimbekov M.Zh, Baitulenov Zh.B., Nakibayeva M.T.** Research of the reservoir parameters restoration problem *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
12. **Pyrkova A.Yu., Ivashchenko A.T., Berillo O.A.** Parallelization of algorithm of prediction of miRNA binding sites in mRNA on the cluster computing platform *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
13. **Yakimenko A. A., Grishchenko M.V.** The experience of implementation of permutation tests using GPU *(Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia)*
14. **Yakimenko A. A., Karavaev D., Belyashov A.** Seismic field simulation on high-performance computers in the problem of studying the consequences of underground nuclear tests *(Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia)*

Section 2. Information management, processing and security

Block 10, Room 3

14.30-18.30
16.00-16.20   Coffee break

Chair: B.Y. Ryabko, N.Arsić
Secretaries: D. Kurmanbaev, Zh. Өzgenbaeva

Lecturers:

1. **Aidarov K.A.[1], Balakaeva G.T.[2]** Admission control for server clusters based on QoS requirements (*[1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Republican Institute for development of leading and research pedagogical staff of education system of the Republic of Kazakhstan, Almaty, Kazakhstan*)

2. **Arsi B.[1], Spalević P.[2], Bašić M.[3], Arsić N.[1], Popović G.[1]** Facebook profiles clustering ([1]Faculty of Science, University of Kragujevac, Kragujevac, Serbia, [2]Faculty of Technical Sciences, Kosovska Mitrovica, [3]Faculty of Sciences and Mathematics, Nis, Serbia)

3. **Milan Bašić.[1], Arsić B.[2]** A novel approach of statistical data manipulation by using some clustering methods (*[1]Faculty of Sciences and Mathematics, University of Niš, Serbia, [2]Faculty of Science, University of Kragujevac, Kragujevac, Serbia*)

4. **Akhmetov B[1]., Ivanov A.[2], Funtikova Yu.[2], Alibiyeva Zh.[3]** Multicriteria statistical analysis of test biometric data (*[1]Ahmet Yesevi Turkish-Kazakh University, Turkestan, Kazakhstan, [2]Penza State University, Penza, Russia, [3]K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan*)

5. **Akhmetov B.[1], Kachalin S.[2], Bezyaev A.[2], Mukapil K[1].** Solving the inverse task of neural network biometrics without mutations and Jenkins' "nightmare" in the implementation of genetic algorithms (*[1]Kazakh National Technical University named after K.I.Satpayev, Almaty, Kazakhstan, [2]Penza Research Electrotechnical Institute, Penza, Russia*)

6. **Amirgaliyev E.N., Mamyrbayev O.J., Muratkhanova T.A.** Recognition of isolated words using the Bayes' theorem *(Institute of information and computing technologies, Almaty, Kazakhstan*)

7. **Amirgaliyev Y.N., Kalimoldayeva A.S.** Module of lexical and morphological analyzer in the development of semantic engine for kazakh language (*Institute of information and computing technologies, Almaty, Kazakhstan*)

8. **Andrianova A., Oleg Yakubailik O.** Usage of GIS technology in the analysis of spatial dynamics of hydrobiological data (Enisey river case study) (Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia)

9. **Arslanov M.Z.** Polynomial algorithm for multiprocessor schedulling problem with three job lengths (Institute of information and computing technologies, Almaty, Kazakhstan)

10. **Bakiyeva A.M., Batura T.V., Fedotov A**.**M**. Methods and Systems of utomatic Text Summarization (Novosibirsk State University, Novosibirsk, Russia)

11. **Baklanova O.E., Baklanov A.E., Shvets O.Ya.** Design of Automated Image Recognition System to Assess the Quality of the Mineral Species using CASE Technology *(D. Serikbayev East Kazakhstan state technical university, Ust-Kamenogorsk, Kazakhstan)*

12. **Biyashev R.G., Kalimoldaev M.N., Nyssanbayeva S.E., Kapalova N.A., Khakimov R.A.** Software Implementation of the Cryptographic System Models Protection With the Given Cryptostrength (*Institute of Information and Computational Technologies MES RK, Almaty, Kazakhstan*)

13. **Biyashev R.G.,. Nyssanbayeva S.E, Begimbayeva Ye.Ye.** A modification of the digital signature algorithm based on modular arithmetic (*Institute of Information and Computational Technologies MES RK, Almaty, Kazakhstan*)

14. **Erzin A., Mladenovic N., R. Plotnikov R.** VNS-based heuristics for Communication Tree Optimal Synthesis Problem in Wireless Sensor Networks (*Ledas Ltd, Novosibirsk, Russia*)

15. **Erzin A., ShabelnikovaN., Osotova L., Amirgaliyev Ye.** Wireless sensor networks and computational geometry problems (*Sobolev Institute of athematics of SB RAS, Novosibirsk, Russia*)

16. **Guskov A.E., Ryabko B.Y., Zubkov A.V.** Classification of scientific documents based on the compression methods (Institute of Computational Technologies SB RAS, Novosibirsk, Russia)

17. **Ilic M.[1], Spalevic Z.[2], SpalevicP.[1], Arsic N.[2], Veinovic M[2].** PayPal e-commerce and e-payment - problems and solutions (*[1]Faculty of Technical Science Kosovska Mitrovica, University of Pristina in Kosovska Mitrovica, Belgrade, Serbia, [2]Singidunum University, Belgrade, Serbia*)

18. **Ilić S.[1], Obradović S.[2], Arsić N.[1], Petrović V.[2]** One implementation of the embedded database protection (*[1]University of Pristina in Kosovska Mitrovica, Singidunum University, Belgrade, Serbia, [2]The School of Electrical and Computer Engineering in Belgrade, Serbia*)

19. **Imanbayev K.** Training radial basis neural networks in making Stok's equations (*Almaty Technological University, Almaty, Kazakhstan*)

20. **Ismaiylov A.** The management of biotechnological production (*Almaty Technological University, Almaty, Kazakhstan*)

21. **Kadochnikov A., Tokarev A., Yakubailik O.** Environmental research software tools and services of Geoportal of ICM SB RAS (*Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*)

22. **Karibayeva A., Abakan M., Amirova D.** Choosing the model for solving the problem of lexical selection for Kazakh language on free/open-source platform Apertium (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)

23. **Kenshimov Ch., Amirgaliyev B., Kairanbay M., Kuatov K.** Object Recognition and Categorization Based on Hierarchical Temporal Memory (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)

24. **KompanietsL.A., Iakubailik T.V.** Three-dimensional hydrophysical numerical model of Lake Shira: regular computations based on the input data resulting from natural odservations (*Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia*)

25. **Kurmangaliyeva V., Takibayeva M., Takibayev N., Aikawa M.** The construction of database and compilation tools for nuclear reaction data at the Central Asian Nuclear Reaction Data Centre (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)

26. **Mansurova M., Alimzhanov E., Dadykina E.** Parallel algorithm of RDF data compression and decompression based on MapReduce Hadoop technology (*Al-Farabi Kazakh National University, Almaty, Kazakhstan*)

27. **Montusiewicz J., Milosz M., Kayumov R.** 3D Computer Technologies as a Tool for Contemporary Archeology (*Lublin University of Technology, Lublin, Poland*)

28. **Mukasheva S.N., Toyshiev N.S., Kurmanov B.K., Sharipova G., Karmenova D.E.** Using GIM-technologies for monitoring of the ionosphere over Kazakhstan region (*Institute of Ionosphere, Almaty, Kazakhstan*)

Subsection 3.1. Mathematical Modeling of Technological Processes

Red Hall

14.30-18.00
16.00-16.20   Coffee break

Chair: S.I. Kabanikhin, S.G. Cherny
Secretaries: A. Kudaibergenov, A. Myrzabaeva
Lecturers:

1. **Abdibekova A.U., Zhumagulov B.T., Zhakebayev D.B.** Modelling of evolution small-scale magnetohydrodynamic turbulence depending on the magnetic viscosity of the environment *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*.

2. **Shokin Yu.I.,   Cherny S.G.,   Esipov D.V.,   Lapin V.N.,   Lyutov A.E., Kuranakov D.S.** Three-dimensional model of fracture propagation from the cavity caused by quasi-static load or viscous fluid pumping *(Institute of Computational Technologies of SB RAS, Novosibirsk, Russia)*.

3. **Zakharov Yu.[1], Zimin A.[2]** Two-Component Incompressible Fluid Model for Simulating Surface Wave Propagation *([1]Kemerovo State University, Kemerovo, Russia, [2]Institute of Computational Technologies SB RAS, Novosibirsk, Russia)*

4. **Dolgov D.,   Zakharov Yu.** Numerical Modeling of Artifcial Heart Valve *(Kemerovo State University, Kemerovo, Russia)*

5. **Danaev N.T., Akhmed-Zaki D.Zh., Mukhambetzhanov S.T., Imankulov T.S.** Mathematical modelling of oil recovery by polymer and surfactant flooding *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*.

6. **Kenzin M., Bychkov I., Maksimkin N.** Hybrid evolutionary approach to multi-objective mission planning for group of underwater robots *([1]Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia)*.

7. **Issakhov A.[1], Roidl B.[2], Meinke M.[2], Schröder W.[2]** Simulation of a transonic airfoil flow using a zonal RANS-LES Method *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Institute of Aerodynamics, RWTH Aachen University, Aachen, Germany,)*.

8. **Kabanikhin S.[1], Krivorotko O.[2]** Fast algorithm for calculation of the moving tsunami wave height *([1]Institute of Computational Mathematics and Mathematical Geophysics of SB RAS, Novosibirsk, Russia, [2]Novosibirsk State University, Novosibirsk, Russia)*.

9. **Kudaikulov A.[1], Josserand C.[2], Kaltayev A.[1]** Theoretical and Numerical Prediction of the Permeability of Fibrous Porous Media *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Institut D'Alembert, CNRS & UPMC, Paris, France)*.

10. **Toleukhanov A.[1], Kaltayev A.[1], Panfilov M.[2]** Analytical and numerical studies of the impact of growth kinetics, motion and chemotaxis of methanogenic

bacteria on changes of the composition of hydrocarbon mixture in underground gas storages *(¹Al-Farabi Kazakh National University, Almaty, Kazakhstan, ²Lorraine University, Nancy, France).*

11. **Alibayeva K., Kaltayev A.** Enhancement of the in-situ leach mineral mining process by the hydrodynamic method *(Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

12. **Mukanova B., Mirgalikyzy T.** Solving the Direct Problem of Direct Current Electrical Sounding *(L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

13. **Taseiko O.V.[1], Spitsina T.P.[1], Milosevic H.[2]** Self-purification modelling for small river in climate conditions of Central Siberia *(¹Siberian State Aerospace University, Krasnoyarsk, Russia, Kosovo University, ²Kosovska Mitrovica, Serbia)*

14. **Khairetdinov M.S., Voskoboynikova G.M.** The numerical modeling of a posteriori algorithms for the geophysical monitoring *(Institute of Computational Mathematics and Mathematical Geophysics Siberian Branch RAS, Novosibirsk, Russia)*

15. **Gorobchuk A.G.** Numerical model of plasma-chemical etching of silicon in CF_4/H_2 plasma *(Institute of Computational Technologies SB RAS, Novosibirsk, Russia)*

Subsection 3.2. Mathematical Modeling of Technological Processes

Block 10, Room 4

14.30-18.00
16.00-16.20   **Coffee break**

Chair: E.A. Novikov, A. Kaltayev
Secretaries: B. Kalmurzaev, A. Valiuolda

Lecturers:

1. **Levykin A.I., Novikov E.A.** A study of (m,k)-methods for solving differential-algebraic systems of index 1 *(Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia)*

2. **Aripov M.M., Rakhmonov Z.R.** On the asymptotics of solutions of heat transfer problems with sources and nonlinear boundary conditions *(National University of Uzbekistan, Tashkent, Uzbekistan)*

3. **Alexeyeva L.A.** Generalized functions method in transport problems of elastodynamics *(Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan)*

4. **Temirbekov N.M., Baigereyev D.R.** Modeling of three-phase non-isothermal flow in porous media using the approach of reduced pressure *(D. Serikbayev East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan)*

5. **Maussumbekova S., Beketaeva A.O.** Application of Immersed Boundary Method in Modelling of Thrombosis in The Blood Flow *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

6. **Aidossov A.A.[1], Aidossov G.A.[1], Danaev N.T.[1], Narbaeva S.M.[1], Zaurbekov N.S.[2]** Inverse equation for determination of anomalies field of gravity force by actual meteorological data *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Almaty Technological University, Almaty, Kazakhstan)*

7. **Bekbauov B.E.[1], Kaltayev A.[1], Baishemirov Zh.[2], Rakhymova A.[2]** Mass conservation and pressure equations for the sequential chemical compositional simulation *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Abai Kazakh National Pedagogical University, Almaty, Kazakhstan).*

8. **Belyayev Ye., Kaltayev A.** Numerical comparison of shear flow coherent structure using ENO FD scheme and DG method *(Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

9. **Belyayev Ye.[1], Kaltayev A.[1], Naimanova A.[2]** Numerical simulation of the combustion in a planar shear layer *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Institute of Mathematics and Mathematical Modeling Ministry of Education and Science Republic of Kazakhstan, Almaty, Kazakhstan).*

10. **Akhmetov B.[1], Amanzholov T.[1], Tungatarova M.[1], Georgiev A.[2]** Modeling of solid liquid phase change process during charging of latent heat storage *([1]Al-*

Farabi Kazakh National University, Almaty, Kazakhstan, [2]*Technical University of Sofia - Branch Plovdiv, Plovdiv, Bulgaria).*

11. **Akpayev B.**[1]**, Otelbaev M.**[1]**, Hasanov A.A.**[2] Source identification problem related to mathematical model of laser surface heating. Numerical results *(*[1]*L.N. Gumilyov Eurasian National University, Astana, Kazakhstan,* [2]*Izmir University, Izmir, Turkey)*

12. **Amirgaliyeva E.**[1]**, Kovalenko A.**[2]**, Kovalenko A.**[3]**, Kozbakova A.**[3] Modeling of networks flows of grinshilds types *(*[1]*Institute of Information and Computing technologies,* [2]*Samara State University,* [3]*K.I. Satpaev Kazakh National Technical University, Almaty, Kazakhstan)*

13. **Amirgaliyeva Zh.**[1]**, Mladenovic N.**[2] New variable neighborhood search for bi-linear optimization *(*[1]*Al-Farabi Kazakh National University, Almaty, Kazakhstan,* [2]*SASA, Belgrade, Serbia).*

14. **Askarbekov R.** Construction of mathematical model, compression of rubber-metal supports and behavior of rubber layer *(Kyrgyz State Technical University, Bishkek, Kyrgyzstan)*

15. **Assanova A.T.**[1]**, Imanchiev A.E.**[2] About new algorithm for solving nonlinear three-point boundary value problem for system of differential equations *(*[1]*Institute of Mathematics and Mathematical Modeling, Almaty,* [2]*K. Zhubanov Aktobe Regional State University, Aktobe, Kazakhstan)*

16. **Bereznev V.A.** An effective method for solving quadratic programming problems *(Computing Center of RAS, Moscow, Russia).*

17. **Bibossinov A.**[1]**, Iskakbayev A.**[1]**, Aleksandrov S.**[2] Mathematical modeling of influence of material microstructure to products formation processes *(*[1]*Al-Farabi Kazakh National University, Almaty, Kazakhstan,* [2]*Institute for problems in mechanics of RAS, Moscow, Russia).*

18. **Bismildin I.R.**[1]**, Temirbekov Y.S.**[2] On the account of distributed inertia of rod mechanism in plane and spatial motion *(*[1]*Al-Farabi Kazakh National University, Almaty, Kazakhstan,* [2]*Almaty Technological University, Almaty, Kazakhstan).*

Subsection 3.3. Mathematical Modeling of Technological Processes

Block 10, Room 5

14.30-18.00
16.00-16.20   Coffee break

Chair: G. S. Khakimzyanov, M.N. Kalimoldaev
Secretaries: B. Akhmetov, A. Gumarova

Lecturers:

1. **Bychkov I.V., Oparin G.A., Feoktistov A.G., Bogdanova V.G., Pashinin A.A.** The simulation modeling technology of warehouse logistics processes in distributed computing environment *(Matrosov Institute for System Dynamics and Control Theory of Siberian Branch of Russian Academy of Sciences, Irkutsk, Russia)*

2. **Chanda A.** A study of isotropic turbulence with the help of vorticity *(University of Calcutta, Kolkata, India)*

3. **Epov M., Shurina E., Shtabel E., Shtabel N.** The modeling of electromagnetic field for different types of source signals *(Institute of Petroleum Geology and Geophysics SB RAS, Novosibirsk, Russia)*

4. **Epov M.I., Shurina E.P., Mikhaylova E.I., Kutischeva A.Y.** The modifications of the multiscale finite element method for solving electromagnetic problems on the AC and DC *(Trofimuk Institute of Petroleum-Gas Geology and Geophysics of the Siberian Branch of the RAS, Novosibirsk State Technical University, Novosibirsk, Russia)*

5. **Glazyrina N., Mukanova B.** Mathematical modeling of technological process of preparation of water for thermal power plants *(L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

6. **Ibrayev A.G.[1], Tyurekhojayev A.N.[2]** Bending vibration of drill string *([1]L.N. Gumilyov Eurasian National University, Astana, Kazakhstan, [2]K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan)*

7. **Issakhov A.** Numerical study of the discharged heat water effect on the aquatic environment from thermal power plant *(Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

8. **Issakhov A., Khan Ye.** Mathematical modelling of detached flow around a car body by using Large eddy simulation method *(Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

9. **Jainakov A.J.[1], Kaleeva A.K.[2], Kurbanaliev A.I.[2]** Prediction of the flow around the building by the control volume method *([1]Asanaliev Institute of Mining and Mining Technologies of the Razzakov Kyrgyz State Technical University, Bishkek, Kyrgyzstan, [2]Kyzyl-Kiya Humanitarian Pedagogic Institute of the Batken State University, Kyzyl-Kiya, Kyrgyzstan)*

10. **Josserand C., Zaleski S., Ray P., Popinet S., Jian Z.** Drop impact investigation using direct numerical simulations *(Institut D'Alembert, Paris, France)*

11. **Kagenov A.M., Glazunov A.A., Eremin I.V.** Mathematical modeling of particle motion under the influence of spacecraft rocket engine supersonic jets in Mars environment *(National Research Tomsk State University, Tomsk, Russia)*

12. **Kalimoldaev M.N.[1], Jenaliyev M.N.[2], Abdildayeva A.[1], Duzbayev T.[1]** The problems of optimal control for electric power systems *([1]Institute of Information and Computational Technologies, Almaty, Kazakhstan, [2]Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan)*

13. **Kalimoldayev M.N.[1], Alexeyeva A.V.[2], Alimhan K.[3], Amirkhanova G.A.[1]** Economic soliton of the spatially two-dimensional nonlinear mathematical A1 model *([1]Institute of Information and Computational Technologies, Almaty, Kazakhstan, [2]Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan, [3]L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

14. **Kalmenov T.Sh., Aripova G.D.** The Navier-Stokes problem in weighted spaces *(Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan)*

15. **Karimov A.** Numerical solution of the one-dimensional problem of a non-Newtonian fluid filtration *(Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

16. **Kenenbaeva G.** Computer modeling of phenomena in dynamical systems *(Institute of Theoretical and Applied Mathematics, NAS KR, Bishkek, Kyrgyzstan)*

17. **Khairetdinov M.S.[1], Gubarev V.V.[2], Voskoboinikova G.M.[1], Seduhina G.F.[1]** Informative Factors of Geophysical Fields Interraction in Problem of the Environmental Protection Prediction *([1]Institute of Computational Mathematics and Mathematical Geophysics SB RAS, [2]Novosibirsk, Russia, Novosibirsl State Technical University, Novosibirsk, Russia)*

18. **Кабанихин С.И.[1], Шолпанбаев Б.Б.[2]** Задача продолжения электромагнитных полей с части границы *([1]Институт вычислительной математики и математической геофизики СО РАН, Новосибирск, Россия, [2]Казахский национальный педагогический университет им. Абая, Алматы, Казахстан)*

19. **Bokayev N.A.** On some properties of signals with finite Fourier-Walsh spectrum *(L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

20. **Dairbayeva S.[1], Belgibayev B.[2], Dairbayev A.[1], Bukesova A.[2]** Clarified process modeling of mudflow mass *([1]International Information Technologies University, Almaty, Kazakhstan, [2]Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

Subsection 3.4. Mathematical Modeling of Technological Processes

Block 10, Room 6

14.30-18.00
16.00-16.20   Coffee break

Chair: H. Milosevic , S.N. Kharin
Secretaries: A. Koldas, A. Tyrfanbaeva

Lecturers:

1. **Kharin S.N.[1], Kassabek S.[2]** Mathematical model of thermoelectric effects during bridge erosion of electrical contacts *([1]Kazakh-British Technical University, Almaty, Kazakhstan, [2]Suleiman Demirel University, Almaty, Kazakhstan)*

2. **Khikmetov A.[1], Karzhaubayev K.[2]** Modelling pollution transport from the residual rocket fuel *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

3. **Milosevic H.[1], Rychkov A.D.[2], Kontrec N.[1], Taseiko O.V.[3]**   The expected inaccuracy in measuring the temperature the expected inaccuracy in measuring the temperature profiles in solid propellant by thermocouple elements *([1]Faculty of Science, Kosovo University, Kosovska Mitrovica, [2]Institute of Computational Technologies of Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia, [3]Siberian State Aerospace University, Krasnoyarsk, Russia)*

4. **Kim A., Shpadi Yu.** Mathematical Modeling of the Destruction Process in the Fault Zone *(JSC National Center of Space Researches and Technologies, Almaty, Kazakhstan)*

5. **Kisala P.[1], Wojcik W.[1], Kashaganova G.[2], Kalizhanova A.[2], Smailov N.[2]** Elongation determination using finite element and boundary element method *([1]Politechnika Lubelska, Lublin, Poland, [2]K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan)*

6. **Koshanov B.** Conditions for solvability of correct boundary value problems for the inhomogeneous polyharmonic equation in a ball *(Institute of Mathematics and Mathematical Modeling, Almaty, Kazakhstan)*

7. **Kuranakov D.S., Lapin V.N., Esipov D.V., Cherny S.G.** 3D model of fatigue crack propagation under cyclic loading *(Institute of Computational Technologies SB RAS, Novosibirsk, Russia)*

8. **Kuzmenko V., Yanchukovskiy V.** Density of temperature coefficients for muons in the atmosphere *(Geophysic service of SB RAS, Novosibirsk, Russia)*

9. **Kuzmenko V., Yanchukovskiy V.** Temperature effect of muons in the atmosphere *(Geophysic service of SB RAS, Novosibirsk, Russia)*

10. **Lapin V.N., Cherny S.G., Kuranakov D.S.** 3D model of fracture propagation caused by viscous compressible fluid pumping *(Institute of Computational Technologies SB RAS, Novosibirsk, Russia)*

11. **Madiyarov M.N.[1], Sailarbek S.[2]** Geoinformation System on the basis of

mathematical model of the microclimate of the industrial city *([1]S. Amanzholov East Kazakhstan State University, Ust-Kamenogorsk, Kazakhstan, [2]D. Serikbayev East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan)*

12. **Makasheva A.[1], Beketaeva A.[1], Belyayev Ye.[2]** Numerical simulation of the mixing in a planar shear layer *([1]Institute of Mathematics and Mathematical Modeling Ministry of Education and Science Republic of Kazakhstan, Almaty, Kazakhstan, [2]Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

13. **Moisseyeva Ye.[1], Naimanova A.[2], Beketaeva A.[2]** Non-uniform ENO Scheme for Simulation of Supersonic Flows *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Institute of Mathematics and Mathematical Modelling, Almaty, Kazakhstan).*

14. **Munir B.[1], Urmashev B.A.[2], Kavokin A.A.[2]** Computational model of thermo-diffusive processes in electrodes by arcing *([1]GIK Institute of Engg.Sci.and Technology, Topi, Pakistan, [2]Al-Farabi Kazakh National University, Almaty, Kazakhstan).*

15. **Muratbekov M.** The discreteness of the spectrum and the distribution of singular numbers (s-numbers) of a class of differential operators of mixed type *(Taraz State Pedagogical Institute, Taraz, Kazakhstan)*

16. **Muratbekov M.B., Igisinov S.** On separability of a class of differential operators in $L_2(R^2)$ *(Taraz State Pedagogical Institute, Taraz, Kazakhstan)*

17. **Nursultanov E.D.[1], Tleukhanova N.T.[2]** Recovery operator of periodic functions *([1]Lomonosov Moscow State University (Kazakh Branch), Astana, Kazakhstan, [2]L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

18. **Ospanov K.N., Zulkhazhav A.** Coercive estimates for a solution of the system of the second order difference equations *(L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

19. **Ospanov K.N., Akhmetkaliyeva R.D.** On the second order differential equation with damped term *(L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

20. **Shaimardan S.** Weighted estimate of q-integral operator with a logarithmic singularity *(L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

Section 4. New Information Technologies in Education

Room 309

14.30-18.00
16.00-16.20   Coffee break

Chair: Z. K. Yuldashev, V.B. Barakhnin
Secretaries: J. Imanova, A. Mukhtarova

Lecturers:

1. **Ashurova D.N., Yuldashev Z. K., Raimova M.U., Yuldasheva M.A.** Concepts of activization of Ttrainees within Structural   Model of education *(National University of Uzbekistan, Tashkent, Uzbekistan)*
2. **Skopin I.N.** An approach to teaching programming *(Institute of Computational Mathematics and Mathematical Geophysics SB RAS, Novosibirsk, Russia)*
3. **Bekbolatov Y., Kartbayev Amandyk**. Kazakh Morphological Analysis for Statistical Machine Translation: A Case Study *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
4. **Барахнин В.Б., Кожемякина О.Ю., Забайкин А.В.** Технология создания метрических справочников и конкордансов русских поэтических текстов (*Институт вычислительных технологий СО РАН, Новосибирский государственный университет, Новосибирск, Россия)*
5. **Petrovic V.V., Grujic A., Jokic A** Positive practice in the implementation of Moodle in e-learning *(The School of Electrical and Computer Engineering of Applied Studies, Belgrade, Serbia)*
6. **Mansurova M., Pyrkova A.Yu., Alimzhanov E.** Design and development of online courses on edX platform *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
7. **Mansurova M., Nugumanova A., Zyryanov D.** A concept map approach to supporting adaptive e-Learning *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
8. **Satybaldiyeva R. Zh., Moldagulova A.N., Nuralin Y., Duisenbayev N., Saktaganova A., Yelibay A., Mailybek M.** About Development of the Technology Radar in Kazakhstan (*International Information Technology University, Almaty, Kazakhstan*)
9. **Shayakhmetova B.K., Omarova S.E. Omarov G.T., Orumbaeva N.T.** Structuralization of pedagogical categories "knowledge" in the process of society informatization *(Karaganda State University, Karaganda, Kazakhstan)*
10. **Tukeyev U., Rakhimova D., Kartbayev A., Zhumanov Z.** Combinational circuits model of Kazakh and Russian languages morphology *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
11. **Urmashev B.A., Pyrkova A.Yu., Mansurova M., Makashev Y., Burlibayev A.Zh., Sarsembayev M.** Database design for the sectoral frame of IT

qualications within TEMPUS project "QUADRIGA" *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

12. **Казаков В. Г., Щеглов Ю.А., Казаков В.В., Носков И.В.** ML-Studio – Web приложение для создания и применения мультимедиа лекций *(Новосибирский государственный университет экономики и управления Новосибирск, Россия)*

Section 5. Technological Process Automation and Control

Block 10, Room 2

14.30-18.00
16.00-16.20   Coffee break

Chair: I.V. Bychkov, Z.N. Murzabekov
Secretaries: P. Omarova, G. Kaliyeva

Lecturers:

1. **Jayaraj S., Belyayev Ye. Kaltaev A., Lokesh P.** Analysis of a Direct Expansion Solar Assisted Heat Pump Suitable for Comfort Applications *(National Institute of Technology, India, Al-Faraby Kazakh National University, Almaty, Kazakhstan)*
2. **Abdoldina F.N., Umirova G.K., Berlibayeva Assem.** Automation of data geodynamic monitoring on an oil and gas field *(Kazakh National Technical University after K.I.Satpayev, Almaty, Kazakhstan)*
3. **Akhmed-Zaki D.Zh., Matkerim B., Mansurova M., Dadykina E.** An approach to the development of distributed applications for oil extraction problems *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
4. **Davydov A., Larionov A., Terekhin I.** Synthesis of plans in multi-agent system using the method of positively constructed formulas *(Matrosov Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia)*
5. **Djosic D., Stefanovic C., Aleksic D., Zdravkovic S., Dinic I.** Level crossing rate of dual - random composite process in the presence of Rician distributed interference *(Faculty of Natural Sciences and Mathematics at University of Pristina, Serbia)*
6. **Kairanbay M. Zh., Amirgaliyev B., Kenshimov S., Kuatov K., Baibatyr Z., Zhantasov A.** Algorithm for Recognition of Kazakhstan Vehicle License Plates *(ABY Applied Systems, Almaty, Kazakhstan)*
7. **Kalimoldayev M.N., Islamgozhayev T.U., Zholmyrzayev A.K. Mazhitov Sh.S.** Design and development of mobile remote controlled robotic platform *(Institute of Information and Computational Technologies, Almaty, Kazakhstan)*
8. **Kisala P., Wojcik W., Kashaganova G., Kalizhanova A., Kussambayeva N., Yussupova G.** Analysis of the possibilities for using a uniform Bragg gratingin a tunable dispersion compensator *(Politechnika Lubelska, Lublin, Poland)*
9. **Lutovac M., Spalevic P., Arsic Nebojsa.** Raspberry Pi, Mathematica, and electrical engineering education *(Faculty of Technical Science Kosovska Mitrovica, University of Pristina in Kosovska Mitrovica)*
10. **Molorodov Y.I., Zelenchuk A.M.** The conception and architecture of the Internet portal for the study of thermophysical properties of materials *(Institute of computational technologies SB RAS, Novosibirsk, Russia)*

11. **Musabekov N.R.,   Utepbergenov I.T., Kasymova D.T., Muslimova A.K., Utegenova A.O.** Integrated Approach for Implementing the Virtual Information Infrastructure of the automated process control system   (*Kazakh National Technical University named after K. Satpayev*)

12. **Мурзабеков З.Н.** Оптимизация непрерывных линейных систем с ограниченным управлением. (*Казахский национальный университет им. Аль-Фараби, Алматы, Казахстан)*

13. **Mustafin S., Zeinullina A., Mussina Z.** About the determination of optimal trajectory condition of stowage material *(Institute of information and computational technologies, Almaty, Kazakhstan)*

14. **Nagul N.V.** Discrete-event systems with state observation properties studying *(Institute for System Dynamics and Control Theory of SB RAS, Irkutsk, Russia)*

15. **Крученецкий В.З., Вязигин С.В., Серикулова Ж.К., Крученецкий В.В.** Беспроводная интеллектуальная среда измерения, передачи и обработки сведений о характеристиках материалов, изделий *(Almaty Technological University, Almaty, Kazakhstan)*

Saturday, 26 September 2015
Al-Farabi KazNU
Department of Mechanics & Mathematics

The Second Plenary Session
Block 10, Red Hall

10.00-13.00

Chair: M.A. Bektemesov
Secretary: A. Kudaibergenov, Zh. Akhmetova

Lecturers:

10.00-10.20	**Christophe Josserand.** Numerical simulation of multiphase flows *(Institut D'Alembert, CNRS & UPMC, Paris, France)*
10.20-10.40	**Oleg I. Potaturkin.** Spectral-Spatial Classification of the Earth Surface Types Using Hyperspectral Remote Sensing *(Institute of Automation and Electrometry of SB RAS Novosibirsk, Russia)*
10.40-11.00	**Darkhan Zh. Akhmed-Zaki.** Information system for oil recovery analysis *(Al-Farabi Kazakh National University Almaty, Kazakhstan)*

<div align="center">Coffee break</div>

11.00-11.30	
11.30-11.50	**Boris Ya. Ryabko.** Optimization of the Internet Search Based on Laws of Information Theory and Psychology *(Institute of Computational Technologies SB RAS Novosibirsk, Russia)*
11.50-12.10	**Gayaz S. Khakimzyanov.** On Some Problems of Numerical Modelling of Surface Waves in the Framework of the Shallow Water Model *(Institute of Computational Technologies SB RAS Novosibirsk, Russia)*
12.10-12.30	**Nickolay Y. Shaparev.** Modeling of absorption and transfer of radiation in an expanding sphere *(Institute of Computational Modelling SB RAS Krasnoyarsk, Russia)*
12.30-12.50	**Yury N. Zakharov.** Computational and Experimental Research of Soil Erosion at the Bottom of Gravity Platforms *(Kemerovo State University Kemerovo, Russia)*

13.00-14.00   **Lunch**

The training seminar «Modern programming models using newest Intel software and hardware tools» within the framework of the Conference 10.00-17.00, Department of Mechanics & Mathematics, Room 201

Section Sessions

Section 2. Information management, processing and security

Block 10, Room 3

14.00-18.00
16.00-16.20   **Coffee break**

Chair: Panić S., R.G. Biyashev
Secretaries: D. Kurmanbaev, Zh.Өzgenbaeva

Lecturers:

1. **Бычков И.В., Ружников Г.М., Сидоров И.А., Сидоров И.А., Фёдоров Р.К., Потапов В.П.** Технологии интеграции разнородных программных систем в информационно-вычислительной среде математического моделирования и анализа данных *(Институт динамики систем и теории управления имени В.М. Матросова СО РАН, Иркутск, Россия)*
2. **Бияшев Р.Г., Калимолдаев М.Н., Рог О.А.** Логический подход к организации многокритериального атрибутного разграничения доступа *(Институт информационных и вычислительных технология, Алматы, Казахстан)*
3. **Шокин Ю.И., Веснин А.Ю., Добрынин А.А., Клименко О.А., Рычкова Е.В.** Математическое моделирование информационных процессов в веб-пространстве *(Институт вычислительных технологий СО РАН, Новосибирск, Россия)*
4. **Амиргалиев Е.Н., Касымбеков А.М.** Разработка алгоритма распознавания образов и классификация на базе группового синтеза *(Институт информационных и вычислительных технологий, Алматы, Казхастан)*
5. **Амиргалиев Е.Н., Юнусов Р.** Системы распознавания образов в задачах автоматизации распознавания паспортных данных *(Институт информационных и вычислительных технологий, Алматы, Казхаста*
6. **Скопин И.Н.** Системный подход к конструированию интерфейсов приложений *(Институт вычислительной математики и математической геофизики СО РАН, Новосибирск, Россия)*
7. **Mussabayev R.** Development of the Kazakh Text-to-Speech Synthesis System on the basis of Fujisaki intonation model *(Institute of Information and Computational Technologies, Almaty, Kazakhstan)*
8. **Shokin Yu.I., Fedotov A.M., Zhizhimov O.L., Barakhnin V.B.** The technology of creating large-scale intelligent information and analytical search engines in semistructured data *(Institute of Computational Technologies SB RAS, Novosibirsk, Russia)*
9. **Nyssanbayeva S.E., Magzom M.M.** Modification of the encryption algorithm, developed on the basis of nonpositional polynomial notations *(RSE "Institute of Information and Computational Technologies" CS MES RK, Almaty, Kazakhstan)*

10. **Osipov A.L., Bobrov L.K.** Predict the properties of chemicals based on Intelligent Computer Systems *(Novosibirsk State University of Economics and Management, Novosibirsk, Russia)*

11. **Rakhmetullina S., Turganbayev Yr., Penenko A.** Information-analytical system "ECO Monitoring" *(East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan)*

12. **Rodionova Z.** Design of algorithms for automated access control based on business process approach *(Novosibirsk State University of Economics and Management, Novosibirsk, Russia)*

13. **Sarsembayev M., Amyrgaliev E., Sarsembayeva T.** Algorithms and methods of searching motion in dynamic images *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

14. **Savic A.[1], Kalemi E.[2], Dëra M.[3]** A case study of a Knowledge Management System ([1]*School of Electrical Engineering and Computer Science applied studies, Belgrade Serbia, [2]Faculty of Economy,University of Tirana, Albania, [3]Faculty of Mathematics Engineering and Physics Engineering, Polytechnic University of Tirana, Albania)*

15. **Sundetova A., Abduali B., Zhanbussunov N., Musabekova Zh.** Study of the problem of creating structural transfer rules for the Kazakh - English and Kazakh-Russian machine translation systems on Apertium platform *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

16. **Vučković D., Panić S., Milosevic H., Đošić D.** Performance analysis of wireless transmission channels in the presence of eta-mu fading and kappa-mu co-channel interference *(Faculty of Sciences, University of Pristina, Kosovska Mitrovica, Serbia)*

17. **Yakubailik O.** Development of geospatial software for environmental monitoring problems *(Institute of Computational Modelling SB RAS, Krasnoyarsk, Russia)*

18. **Zhantaeyev Zh., Kim A., Ivanchukova A., Junisbekova V., Turgumbayev A.** Movements of earth's surface in source zones of Nothern Tien Shan by satellite data *(JSC National center of space researches and technologies, Almaty, Kazakhstan)*

19. *н)*

20. **Исмаил Е.Е.** Особенности и требования к качеству программных средств космического назначения *(Институт космической техники и технологий, Алматы, Казахстан)*

21. **Кадочников А.А.** Особенности разработки программно-технологического обеспечения для региональных геоинформационных веб-систем *(Институт вычислительного моделирования, Красноярск, Россия)*

22. **Пестунов И.А., Синявский Ю.Н., Рылов С.А., Мельников П.В., Дубровская О.А., Лазарев Д.В.** Технология использования разнородных данных при сегментации спутниковых изображений высокого разрешения *(Институт вычислительных технологий СО РАН, Новосибирск, Россия)*

23. **Платонов К.А.** Технологии извлечения количественной информации из геологических научных публикаций и сервисы их обработки *(Дальневосточный геологический институт ДВО РАН, Приморский край Россия)*

24. **Полякова А.П., Светов И.Е., Султанов М.А.** О задаче идентификации множества точек разрыва геометрических объектов по томографическим данным *(Университет им. Ахмеда Яссави, Туркестан, Казахстан)*

25. **Сантеева А.А., Жижимов О.Л.** О пользовательских интерфейсах для работы с тезаурусами и рубрикаторами в распределенных разнородных информационных системах на примере платформы ZooSPACE *(Новосибирский государственный университет, Новосибирск, Алматы)*

26. **Серикбаева Е. Виляев А.В., Жантаев З.С.** Опыт использования космических снимков Aster для решения геологических задач на примере Жезказганского рудного района *(Институт ионосферы, Алматы, Казахстан)*

27. **Симонов К.В., Курако М.А.** Вычислительная технология обработки данных комплексного мониторинга природных геообъектов *(Сибирский федеральный университет, Красноярск, Россия)*

28. **Скачков Д.М., Жижимов О.Л.** Интеграция географических метаданных в современные библиотечные системы *(Институт вычислительных технологий СО РАН, Новосибирск, Россия)*

29. **Токарев А.В.** Разработка подсистемы актуализации базовых пространственных данных по населенным пунктам Красноярского края *(Институт вычислительного моделирования СО РАН, Красноярск, Россия)*

Subsection 3.5. Mathematical Modeling of Technological Processes

Red Hall

14.00-18.00
16.00-16.20   Coffee break

Chair: M.A. Aripov, U.S. Abdibekov
Secretaries: N. Shakhan, G. Kaliyeva

Lecturers:

1. **Temirbekov N.M.[1], Malgazdarov E.A.[2], Tokanova S.O.[1]** Comprehensive program for numerical simulation convective flow of viscous incompressible fluid a curvilinear coordinate system *([1]D. Serikbayev East Kazakhstan State Technical University, Ust-Kamenogorsk, Kazakhstan, [2]S. Amanzholov East Kazakhstan State University, Ust-Kamenogorsk, Kazakhstan,)*

2. **Yuldashev Z.Kh.[1], Ibragimov A.A.[2], Shominasov Sh.Sh.[1]** Algorithms of determination by the path of robots in the conditions of interval uncertainty of data *([1]National University of Uzbekistan, Tashkent, Uzbekistan, [2]Navoi State Pedagogical Institute, Navoi, Uzbekistan)*

3. **Абдибеков У.С.,   Каржаубаев К.К.**   Численное   моделирование турбулентного   конвективного   переноса   примеси   при   наличии температурной инверсии *(Казахский национальный университет имени аль-Фараби, Алматы, Казахстан).*

4. **Арипов М., Матякубов** А. Асимптотическое поведение автомодельных решений нелинейных параболических систем недивергентного вида *(Национальный университет Узбекистана, Ташкент, Узбекистан)*

5. **Tyurekhojayev A.N.[1], Kalzhanova G.K.[2], Ibrayev A.G.[3]** Analytical solution of the problem about bending of annular plates subject to the action of the lateral load *([1]K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan, [2]Ilyas Zhansugurov Zhetysu State University, Taldykorgan, Kazakhstan, [3]L.N. Gumilyov Eurasian National University, Astana, Kazakhstan)*

6. **Tyurekhojayev A.N.[1], Sergaziyev M.Zh.[2]** Propagation of nonlinear waves in a mechanical system with contact dry friction under the action of cyclic loads *([1]K.I. Satpayev Kazakh National Technical University, Almaty, Kazakhstan, [2]International Information Technologies University, Almaty, Kazakhstan)*

7. **Ybyraiymkul D.T.[1], Kaltayev A.[1], Ng K.C.[2]** Thermal behaviours of the absorbed natural gas storage *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]National University of Singapore, Singapore, Singapore).*

8. **Shishlenin M.A.** Regularization methods for multidimensional analog of Gelfand-Levitan-Krein equation *(Sobolev Institute of Mathematics of SB RAS, Novosibirsk, Russia,)*

9. **Shmygaleva T.A.[1], Kupchishin A.I.[2], Shmygalev E.V.[1], Jeleunova Sh.E.[1], Cherikbayeva L.Sh.[1], Masyrova I.D.[1], Alirakymov B.[1]** Mathematical

modelling of radiating processes in solids irradiated by heavy ions *([1]Al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]Abai Kazakh National Pedagogical University, Almaty, Kazakhstan).*

10. **Zhantayev Zh., Bibossinov A., Fremd A.** Using of geological and geophysical data in identifying of structurally homogeneous regions of the earth's crust in the case of Caspian region *(JSC National center of Space researches and technologies, Almaty, Kazakhstan).*

11. **Zhumatov S.S.** On an instability of nonlinear controllable system in the neighborhood of program manyfold *(Institut of mathematics and mathematical modeling MES RK, Almaty, Kazakhstan)*

12. **Бекетаева А.О., Шахан Н.Ш.** Математическое моделирование ударно-волновых структур при взаимодействии скачков уплотнения с пограничными слоями нижней и верхней стенки *(Казахский национальный университет имени аль-Фараби, Алматы, Казахстан)*

13. **Ажиханов Н.Т., Жунисов Н.М.** Задача фильтрации жидкости к разноориентированной горизонтальной скважине в деформируемой трансверсально-изотропной среде *(Международный казахско-турецкий университет им. Х.А. Ясави, Туркестан, Казахстан)*

14. **Азимов А.А.** Обратная задача лечения организма бактериостатическим антибиотиком с измерением общей численности бактерий *(Казахский национальный университет имени аль-Фараби, Алматы, Казахстан).*

15. **Айменова К.А.[1], Иманбердиев К.Б.[2]** О некорректной задаче для уравнения Пуассона *([1]Институт математики и математического моделирования КН МОН РК, Алматы, Казахстан, [2]Казахский национальный университет имени аль-Фараби, Алматы, Казахстан).*

16. **Айпанов Ш.А., Мурзабеков З.Н.** Оптимальная стабилизация вращательного движения космического аппарата на конечном интервале времени *(Институт математики и механики КазНУ им. аль-Фараби, Алматы, Казахстан)*

17. **Айтжан А.Б., Ыбырайымкул Д.Т.** Численное исследование процесса разрядки природного газа из терморегулируемого слоя адсорбента *(Казахский национальный университет им. аль-Фараби, Алматы, Казахстан).*

18. **Алимова А.Н.** Численные методы решения задачи Дирихле для волнового уравнения *(Казахский национальный технический университет им. К.И. Сатпаева, Алматы, Казахстан)*

19. **Ахмед-Заки Д., Сакабеков А., Аужани Е.** Численное решение трехмерной двухфазной фильтрационной задачи по идентификации параметров неоднородного нефтяного пласта *(Казахстанско-Британский технический университет, Алматы, Казахстан)*

20. **Tleubergenov M.I.[1], Azhymbaev D.T.[2]** On the construction of equations in the form of Lagrange, Hamilton and Birkhoff by the given properties of motion in the presence of random perturbations *([1]Institute of Mathematics and Mathematical Modeling MES RK, Almaty, Kazakhstan, [2]K. Zhubanov Aktobe Regional State University, Aktobe, Kazakhstan)*

Subsection 3.6. Mathematical Modeling of Technological Processes

Block 10, Room 4

14.00-18.00
16.00-16.20   Coffee break

Chair: A.J. Jainakov, Yu.N. Zakharov
Secretaries: B. Kalmurzaev, A. Valiuolda

Lecturers:

1. **Жапбасбаев У.К.[1], Рамазанова Г.И.[1], Саттинова З.К.[2], Шахов С.А.[3]** Процесс затвердевания шликера оксида бериллия с учетом фазового перехода (*[1]Казахстанско-Британский технический университет, Алматы, Казахстан, [2]Евразийский национальный университет им. Л. Гумилева, Астана, Казахстан, [3]Сибирский государственный университет путей сообщения, Новосибирск, Россия)*

2. **Бердышев А.С.[1], Имомназаров Х.Х.[2], Михайлов А.А.[2], Султанов М.А.[3]** Об одной термодинамической согласованной нелинейной модели пороупругости (*[1]Казахский национальный университет им. аль-Фараби, Алматы, Казахстан, [2]Институт вычислительной математики и математической геофизики СО РАН, Новосибирск, Россия, [3]Еразийский национальный университет им. Л.Н. Гумилева, Астана, Казахстан)*

3. **Жайнаков А., Султангазиева Р.Т., Аманкулова Н.А.** О влиянии состава защитных газов на поведение электрической дуги и сварочной ванны *(Кыргызский государственный технический университет им. И. Раззакова, Бишкек, Кыргызстан)*

4. **Жайнаков А.А., Султангазиева Р.Т., Медралиева Б.Н.** Численный анализ гидродинамических процессов сварочной ванны при электродуговой сварке *(Кыргызский государственный технический университет им. И. Раззакова, Бишкек, Кыргызстан)*

5. **Жайнаков А.Ж.[1], Хикметов А.[2], Каржаубаев К.[2]** Математическое моделирование переноса нефтяной пленки на поверхности моря (*[1]Кыргызский государственный технический университет им. И. Раззакова, Бишкек, Кыргызстан, [2]Казахский национальный университет имени аль-Фараби, Алматы, Казахстан)*

6. **Билал Ш.** О свойствах дробной степени оператора Штурма-Лиувилля *(Институт математики и математического моделирования МОН РК, Алматы, Казахстан).*

7. **Долгов Д.А., Захаров Ю.Н.** Моделирование движения вязкой неоднородной жидкости в крупных кровеносных сосудах *(Кемеровский государственный университет, Кемерово, Россия)*

8. **Захаров Ю.Н., Иванов К.С., Гейдаров Н.А.** Численное моделирование размыва грунта у основания платформ гравитационного типа *(ГОУ ВПО*

Кемеровский государственный университет, Кемерово, Россия)

9. **Кунакбаев Т.[1], Отелбаев М.[2]** К определению минимально возможного расстояния между тремя вращающимися ветротурбинами карусельного типа *([1]Казахский национальный университет имени аль-Фараби, Алматы, Казахстан, [2]Еразийский национальный университет им. Л.Н. Гумилева, Астана, Казахстан).*

10. **Биргебаев А.** Гладкость решений (разделимость) нелинейного стационарного уравнения Шредингера *(Казахский национальный педагогический университет имени Абая, Алматы, Казахстан).*

11. **Бондарева Л.В., Захаров Ю.Н.** Численное моделирование процесса очистки промышленных стоков в отработанных горных выработках *(ГОУ ВПО Кемеровский государственный университет, Кемерово, Россия)*

12. **Деревцов Е.Ю., Мальцева С.В., Светов И.Е.** Построение операторов индикатора неоднородности тензорных полей на основе их известных лучевых преобразований *(Институт математики им. С.Л. Соболева СО РАН, Новосибирск, Россия)*

13. **Диарова Д.М.[1], Земцова Н.И.[2]** Применение компьютерной алгебры в качественном исследовании ньютоновой проблемы многих тел *([1]Атырауский институт нефти и газа, Атырау, Казахстан, [2]ВЦ РАН им. А.А. Дородницына, Москва, Россия)*

14. **Мазаков Т.Ж., Джомартова Ш.А., Жакыпов А.Т., Турсынбай А.Т.** Критерий управляемости нелинейных динамических систем *(Казахский национальный университет имени аль-Фараби, Алматы, Казахстан)*

15. **Инкарбеков М.К.** Исследование фильтрованной функции плотности для моделирования крупных вихрей реагирующих турбулентных течений *(Казахский национальный университет им. аль-Фараби, Алматы, Казахстан)*

16. **Иркимбеков Р.А., Котов В.М., Байгожина А.А.** Характеристики переноса нейтронов в реакторе ИГР *(Институт атомной энергии Национального ядерного центра Республики Казахстан, Курчатов, Казахстан)*

17. **Дженалиев М.Т.[1], Рамазанов М.И.[2]** О разрешимости особого интегрального уравнения Вольтерра второго рода со спектральным параметром *([1]Институт математики и математического моделирования, Алматы, Казахстан, [2]Карагандинский государственный университет им. Е.А. Букетова, Караганда, Казахстан)*

18. **Dairbayeva G.M.** An Inverse Problem for the Stokes Equations *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

19. **Вьюнник Н.М., Кириченко А.А.** Численное моделирование отвода диффузионного слоя в процессе концентрирования молока *[1]ГОУ ВПО Кемеровский государственный университет, Кемерово, Россия)*

20. **Губарев В.В., Терехов Р.В., Пушкарева С.А.** О применимости корреляционного анализа для случайных сигналов с нелинейной регрессией *(Новосибирский государственный технический университет, Новосибирск, Россия)*

Subsection 3.7. Mathematical Modeling of Technological Processes

Block 10, Room 5

14.00-18.00
16.00-16.20   Coffee break

Chair: A.I. Khisamutdinov, S.I. Smagin
Secretaries: A. Kudaibergenov, A. Myrzabaeva

Lecturers:

1. **Пеньковский В.И., Корсакова Н.К.** Модель гидравлического разрыва пласта на основе механики и фильтрации в гетерогенной средах *(Институт гидродинамики им. М.А. Лаврентьева СО РАН, Новосибирск, Россия)*
2. **Миргаликызы Т., Муканова Б.Г.** Моделирование влияния рельефных границ при решений прямой задачи электроразведки постоянным током *(Евразийский национальный университет имени Л.Н. Гумилева, Астана, Казахстан*)
3. **Смагин С.И., Пономарюк Ю.Ю.** Математическое моделирование нагрева поверхностного слоя катода при электроискровом легировании *(Вычислительный центр ДВО РАН, Хабаровск, Россия)*
4. **Хисамутдинов А.И.** Задачи уравнения переноса и ядерно-геофизические технологии *(Институт нефтегазовой геологии и геофизики им. А.А. Трофимука СО РАН, Новосибирск, Россия)*
5. **Хисамутдинов А.И.[1], Банзаров Б.В.[2], Урамаев М.Ш.[1]** Комплекс программ NskMCNG для решения задач ядерно-геофизических технологий *([1]Институт нефтегазовой геологии и геофизики им. А.А. Трофимука СО РАН, Новосибирск, Россия, [2]Новосибирский государственный университет, Новосибирск, Россия)*
6. **Шокин Ю.И., Шурина Э.П., Иткина Н.Б.** Применение неконформных конечноэлементных методов для моделирования процессов с фазовыми переходами *(Новосибирский государственный технический университет, Институт вычислительных технологий СО РАН, Новосибирск, Россия)*
7. **Темирбеков Н.М., Тураров А.К.** Математическая модель двумерного осесимметричного движения газожидкостной смеси в газлифтной скважине *(Восточно-Казахстанский государственный технический университет им. Д. Серикбаева, Усть-Каменогорск, Казахстан)*
8. **Мардонов Б.М.[1], Аманов С.С.[1], Хаджиева Л.А.[2]** Численное моделирование нелинейных колебательных процессов в колоннах при бурении нефтегазовых скважин *([1]Ташкентский институт текстильной и легкой промышленности, Ташкент, Узбекистан, [2]Казахский национальный университет им. аль-Фараби, Алматы, Казахстан)*
9. **Митин К.В., Любанова А.Ш.** Моделирование потоков ионов методом частиц *(Сибирский федеральный университет, Красноярск, Россия)*

10. **Мурзабеков З.Н.**[1], **Милош М.**[2], **Тусупова К.Б.**[1] Моделирование распределения ресурсов в трехсекторной математической модели кластера *([1]Казахский национальный университет имени аль-Фараби, Алматы, Казахстан, [2]Люблинский технологический университет, Люблин, Польша)*

11. **Перегудин С.И.**, **Холодова С.Е.** Редукция в исследовании крупномасштабной динамики с учетом эффектов диффузии магнитного поля *(Санкт-Петербургский национальный исследовательский университет информационных технологий, механики и оптики, Санкт-Петербург, Россия)*

12. **Садуллаева Ш.А.**, **Пардаева Г.** Численное моделирование одной системы взаимной реакции-диффузии с двойной нелинейностью *(Ташкентский университет информационных технологий, Ташкент, Узбекистан)*

13. **Сарсенов Б.Т.** Моделирование нестационарных контактных задач динамики упругих сред *(Международный казахско-турецкий университет имени Х.А. Яссави, Туркестан, Казахстан)*

14. **Стуколов С.В.** Численное моделирование экспериментального волнопродуктора *(Кемеровский государственный университет, Кемерово, Россия)*

15. **Тукенова Л.М.**, **Скакова А.Ж.** О существовании обобщенного решения модели неоднородной жидкости в магнитном поле *(Новый экономический университет имени Турара Рыскулова, Алматы, Казахстан)*

16. **Урмашев Б.А.**[1], **Турсынбай А.Т.**[1], **Жайнаков А.Ж.**[2] Разработка методов определения и способов расчета действительных значений основных временных параметров линейной трехкамерной фармакокинетики *([1]Казахский национальный университет имени аль-Фараби, Алматы, Казахстан, [2]Кыргызский Государственный Технический Университет им. И. Раззакова, Бишкек, Кыргызстан)*

17. **Шакенов К.К.**, **Заманова С.К.** Численные методы решения уравнений Навье-Стокса *(Казахский национальный университет имени аль-Фараби, Алматы, Казахстан).*

18. **Яхияев Ф.К.** Математическое моделирование процесса возникновения оползневых потоков в теле плотины (дамбы) сложного неоднородного строения *(Научно-исследовательский институт математики и механики КазНУ им. аль-Фараби, Алматы, Казахстан)*

Section 5. Technological Process Automation and Control

Block 10, Room 2

14.00-18.00
16.00-16.20   Coffee break

Chair: O. I. Potaturkin, V.V. Petrovic
Secretaries: P. Omarova, G. Kaliyeva

Lecturers:

1. **Смагин С.И., Сорокин А.А.** Развитие информационно-телекоммуникационных и вычислительных ресурсов для работы с научными данными на Дальнем Востоке России *(Вычислительный центр ДВО РАН, Красноярск, Россия)*
2. **Ozhikenov K.A., Utebaev R.M., Ismagulova R.S., Ozhiken A.K., Aitzhanova G.D.** Simulation of the Control System Withdrawable Sensor Logging *Stations (Kazakh National Technical University named K.I. Satpaev, Almaty, Kazakhstan)*
3. **Petrovic V.V., Grujic A., Jokic A.** Application of programmable logic controllers for e cient use of photovoltaic panels *(The School of Electrical and Computer Engineering of Applied Studies, Belgrade, Serbia)*
4. **Pachshenko G. N.** Algorithm for construction of the intellectual control system of the object with inexact parameters and delay on the basis of artificial neural networks *(Institute of information and computing technology, Almaty, Kazakhstan)*
5. **Poleshchuk A.G., Shimansky R.** Diffractive optical elements for a quality checking of the aspherical mirrors of large telescopes *(Institute of Automation and Electrometry Siberian Branch of Russian Academy of Sciences, Novosibirsk, Russia)*
6. **Гронь Д.Н., Любанова А.Ш.** Моделирование и управление процессом электролитического рафинирования меди *(Сибирский федеральный университет, Красноярск, Россия)*
7. **Rakhimova D., Abakan M**. The problem of Word sense disambiguation in Machine Translation system of Russian-to-Kazakh languages *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*
8. **Samigulina G. A., Samigulina Z.I.** Immune Network technology of complex objects control based on computing clusters using virtual machines *(Institute of Information and Computing Technologies, Almaty, Kazakhstan)*
9. **Shiryayeva O., Denisova T** Investigation of artificially immune system with using of fuzzy logic *(Kazakh National Technical University after K. Satpaev, Almaty, Kazakhstan)*
10. **Urmashev B., Makashev Y., Omarova P. T., Dosbol U.A., Alimbayeva B.K.** Development of the computer program of foresting desertification of the territory

of the North Kazakhstan region *(Al-Farabi Kazakh National University, Almaty, Kazakhstan)*

11. **Астраков С.Н., Амиргалиев Е.Н.**   Задачи покрытий и упаковок в некоторых приложениях (*Новосибирский национальный исследовательский университет, Новосибирск, Россия, Казахский национальный университет им. Аль-Фараби, Алматы, Казахстан)*

12. **Волков Д.В., Епихин А.М**   Архитектура программного комплекса интеллектуального облачного сервиса мониторинга состояния и управления для удаленных распределенных объектов *(Special Design and Technological Bureau «Nauka» Krasnoyarsk Scientific Centre of Siberian Branch Russian Academy of Sciences, Krasnoyarsk, Russia)*

13. **Гаченко А. С., Ружников Г.М., Михайлов А.А., Хмельнов А.Е.** Применение ГИС и WEB-технологий для создания геоинформационной системы "Инвестор" *(Matrosov Institute for System Dynamics and Control Theory of Siberian Branch of Russian Academy of Sciences (ISDCT SB RAS), Irkutsk, Russia)*

14. **Жантаев Ж.Ш., Жумабаев Б.Т., Николаевский Н.Ф., Крякунова О.Н., Малимбаев А**. Организация центра сбора экспериментальных геофизических данных в реальном времени для исследования ближнего космоса *(ДТОО "Институт ионосферы", Алматы, Казахстан)*