



# PROGRAM

International Workshop

# COMPUTING TECHNOLOGIES AND APPLIED MATHEMATICS

**Amur State University**  
Blagoveshchensk, Russia  
June 12–16, 2023





The International Workshop on Computing Technologies and Applied Mathematics (CTAM 2023) provides a forum for experts and researchers to exchange original results and valuable ideas in different aspects of using computing technologies and advanced methods of applied mathematics in science and engineering.

CTAM is organized by Amur State University, Far Eastern Federal University, Tomsk State University and Institute for Applied Mathematics

#### **PROGRAM COMMITTEE**

Prof. Evgeni Nurminski (Chair)  
Prof. Gennadiy Alekseev  
Prof. Gabil Amiraliyev  
Prof. Alexander Chebotarev  
Prof. Liu Chi  
Prof. Eugenie Eremin  
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#### **ORGANIZING COMMITTEE**

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Prof. Mikhail Guzev  
Prof. Eduard Galazhinsky  
Prof. Alexander Samardak  
Prof. Konstantin Chekhonin  
Prof. Andrei Leyfa  
Mr. Andrei Sushchenko  
Dr. Liubov Yatsevich

#### **CONFERENCE VENUE**

Amur State University (Ignatievskoe shosse 21, 675027 Blagoveshchensk, Russia)

#### **WORKSHOP HOST**

Laboratory of Mathematical Modeling of Complex Physical & Biological Systems  
(Amur State University)

#### **TOPICS**

- Mathematical and Optimization Modeling
- Numerical Algorithms and Computer Simulations
- Data Mining
- Models of Control Theory and Applied Algorithms
- Design and Diagnostics of Computing Systems
- High performance computing and applications



**June 12** Monday

Arrival day

**Location** Amur State University, Main building

Time	Announce
<b>Location</b>	Advanced Vocational Training Center
16:30 – 18:00	<b>Registration</b>
17:00 – 18:00	The Exhibition Hall of Rocket and Space Technology
18:00 – 18:30	Greetings from the Organizing Committee
18:30 – 21:00	Welcome Party





**June 13** Tuesday

**Location** Amur State University, Main building

Time	Announce
<b>Location</b>	Event Hall
9:30 – 10:00	<b>Late Registration</b>
10:00 – 11:00	<b>Opening Ceremony</b>
<b>Plenary Session</b>	
<b>Location</b>	Advanced Vocational Training Center
<b>Chair</b>	Mikhail Galanin
11:10 – 11:50	<b>Li Guozhen</b> INTERACTIVE AUTHORIZING AND EXPLORATIONS FOR HIERARCHICAL DATA VISUALIZATION Beijing Institute of Technology
11:50 – 12:30	<b>Anna Maslovskaya</b> FRACTAL FORMALISM AND FRACTIONAL DIFFERENTIAL MODELS: HIDDEN DIMENSIONS IN APPLIED PROBLEMS OF MICROBIOLOGY Amur State University
12:40 – 13:30	<b>Lunch ('Copernicus' Cafe)</b>
13:40 – 16:00	<b>Hybrid Session I</b> <b>MATHEMATICAL AND OPTIMIZATION MODELING</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join">https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join</a>
<b>Location</b>	Advanced Vocational Training Center
<b>Chair</b>	Alexander Chebotarev
13:40 – 14:00	<b>Mikhail Stepovich</b> ON SOME ASPECTS OF MATHEMATICAL MODELING AND QUALITATIVE ASSESSMENTS OF DIFFUSION PROCESSES IN ELECTRON PROBE TECHNOLOGIES OF SEMICONDUCTOR MATERIALS Kaluga State University



<b>Time</b>	<b>Announce</b>
14:00 – 14:20	<b>Aleksandr Gonchenko</b> ON A REVERSIBLE THREE-DIMENSIONAL SYSTEM CONTAINING AN ATTRACTOR AND A LORENTZ REPELLER Lobachevsky State University of Nizhny Novgorod
14:20 – 14:40	<b>Dmitrii Tverdyi</b> ABOUT MATHEMATICAL MODELING OF HEREDITARY TRANSFER OF RADON IN THE SUBSOIL AIR ACCORDING TO MONITORING DATA ON THE PETROPAVLOVSK- KAMCHATSK GEODYNAMIC POLYGON Institute of Cosmophysical Research and Radio Wave Propagation FEB RAS
14:40 – 15:00	 <b>Irina Stepanova</b> EVOLUTION OF A CONVECTIVE FLOW IN A NONHOMOGENEOUSLY HEATED HORIZONTAL CHANNEL Institute of Computational Modelling of the Siberian Branch of the Russian Academy of Sciences
15:00 – 15:20 *	<b>Nikolai Park</b> ITERATIVE ALGORITHM FOR SOLVING THE OPTIMAL CONTROL PROBLEM FOR A MODEL OF INTRAVENOUS LASER ABLATION Far Eastern Federal University
15:20 – 15:40	<b>Olga Soboleva</b> STUDY OF NUMERICAL ALGORITHM OF IDENTIFICATIONS OF UNKNOWN DIFFUSION COEFFICIENT FOR STATIONARY MASS TRANSFER MODEL Institute of Applied Mathematics FEB RAS
15:40 – 16:00	<b>Lubov Moroz</b> TIME-FRACTIONAL GENERALIZATION OF LANDAU – GINZBURG – KHALATNIKOV MODEL: APPLICATION TO FERROELECTRIC SWITCHING DYNAMICS Amur State University
13:40 – 16:00	<b>Hybrid Session II</b> <b>NUMERICAL ALGORITHMS AND COMPUTER SIMULATION</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/hvh-6jx-8mi-19s/join">https://vconf.amursu.ru/rooms/hvh-6jx-8mi-19s/join</a>
<b>Location</b>	<b>319B</b>
<b>Chair</b>	<b>Ahmed Hendy</b>
13:40 – 14:00	<b>Konstantin Nefedev</b> DEVELOPMENT OF A QUANTUM MINIMUM SEARCHING ALGORITHM FOR SPIN SYSTEMS WITH INTERACTION Far Eastern Federal University

Time	Announce
14:00 – 14:20	<b>Ivan Yarovenko</b> EXTRAPOLATION APPROACHES TO IMPROVING QUALITY IMAGES IN X-RAY PULSED TOMOGRAPHY Institute of Applied mathematics FEB RAS
14:20 – 14:40 *	<b>Samvel Sarukhanian</b> VARIATION OF CELLULAR AUTOMATON LATTICES FOR MODELING GROWTH OF BIOFILMS UNDER SUBSTRATE – LIMITED CONDITIONS Amur State University
14:40 – 15:00 *	<b>Kirill Kuznetsov</b> USING ARTIFICIAL INTELLIGENCE TECHNOLOGY FOR NUMERICAL SIMULATION OF ONE-DIMENSIONAL NAVIER-STOKES EQUATIONS FOR COMPRESSIBLE MEDIA Far Eastern Federal University
14:20 – 14:40 *	 <b>Aliaksandr Shapkin</b> ALGORITHM FOR ESTIMATION OF TOTAL ELECTRONIC CONTENT OF THE IONOSPHERE The United Institute of Informatics Problems of the National Academy of Sciences of Belarus
15:20 – 15:40	 <b>Murat Beshtokov</b> LOCAL AND NONLOCAL BOUNDARY VALUE PROBLEMS FOR A HYPERBOLIC EQUATION WITH TWO FRACTIONAL DIFFERENTIATION OPERATORS Institute of Applied Mathematics and Automation KBSC RAS
15:40 – 16:00	 <b>Petr Andriushchenko</b> A NEW LOOK AT THE SPIN GLASS PROBLEM FROM A DEEP LEARNING PERSPECTIVE Heidelberg University
13:40 – 16:00	<b>Hybrid Session III</b> <b>DATA MINING</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/hkr-d9v-48k-vxr/join">https://vconf.amursu.ru/rooms/hkr-d9v-48k-vxr/join</a>
<b>Location</b>	<b>329</b>
<b>Chair</b>	<b>Nataliya Stankevich</b>
13:40 – 14:00	 <b>Yurii Kosolapov</b> METHOD FOR EVALUATING THE EFFICIENCY AND POTENCY OF OBFUSCIOUS TRANSFORMATIONS FOR BINARY EXECUTABLE FILES Southern Federal University
14:00 – 14:20 *	<b>Ahmedkhan Radzhabov</b> DEVELOPMENT OF A DECISION SUPPORT SYSTEM FOR THE DIAGNOSTICS OF PATHOLOGIES OF THE

Time	Announce
	<p>CARDIOVASCULAR SYSTEM ON THE X-RAY IMAGES OF THE CHEST USING AUGMENTATION BY THE METHOD OF GENERATION OF ARTIFICIAL IMAGES</p> <p>Joint Institute for Informatics Problems of the National Academy of Sciences of Belarus</p>
<p>14:20 – 14:40</p> <p style="text-align: center;">*</p>	<p> <b>Petr Pugach</b></p> <p>MASS ASSESSMENT OF RESIDENTIAL REAL ESTATE USING THE PRIMARY GRAPH MODEL OF THE CITY</p> <p>Far Eastern Federal University</p>
<p>14:40 – 15:00</p> <p style="text-align: center;">*</p>	<p><b>Vladislav Salmiyanov</b></p> <p>MULTIFRACTAL PARAMETERIZATION OF RASTER IMAGES OF LUNG COMPUTED TOMOGRAPHY</p> <p>Amur State University</p>
<p>15:00 – 15:20</p> <p style="text-align: center;">*</p>	<p> <b>Tatiana Sivakova</b></p> <p>APPLICATION OF MEDICAL DECISION SUPPORT SYSTEMS TO REDUCE RISKS IN POLYPHARMACOTHERAPY</p> <p>Keldysh Institute of Applied Mathematics of Russian Academy of Sciences</p> <p>Plekhanov Russian University of Economics</p>
<p>15:20 – 15:40</p>	<p> <b>Peter Ukhov</b></p> <p>DATASET FORMATION TO STUDY FLOOD EVENTS ON THE AMUR RIVER</p> <p>Moscow Aviation Institute</p>
<p>15:40 – 16:00</p> <p style="text-align: center;">*</p>	<p> <b>Dmitrii Minullin</b></p> <p>NEURAL NETWORK APPROACH TO THE ANALYSIS OF TEACHERS' PROFESSIONAL DEFICITS</p> <p>Kazan Federal University</p>
<p>16:00 – 18:00</p>	<p><b>Coffee area</b></p>
<p>16:40 – 18:20</p>	<p><b>Poster Blitz Session. Sector A</b></p> <p><b>Web link for on-line connection</b></p> <p><a href="https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join">https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join</a></p>
<p><b>Location</b></p>	<p><b>Advanced Vocational Training Center</b></p>
<p>16:40 – 17:00</p> <p style="text-align: center;">*</p>	<p> <b>Azalea Abdullina</b></p> <p>HOW TO USE DATA MINING TO MAKE MEANINGFUL DECISIONS</p> <p>Kazan State Power Engineering University</p>
<p>17:00 – 17:20</p> <p style="text-align: center;">*</p>	<p><b>Ivan Shevkun</b></p> <p>CHARACTERISTICS OF GEOMETRIC PATTERNS FOR A REACTION-DIFFUSION MODEL OF GROWTH OF BACTERIA CULTURED ON MEDIA</p> <p>Amur State University</p>
<p>17:20 – 17:40</p>	<p> <b>Yixuan Shuai</b></p> <p>A REACTION-DIFFUSION-CONVECTION MODEL OF THE</p>

Time	Announce
*	BACTERIAL COMMUNICATION IN MICROFLUID SYSTEMS Amur State University
17:40 – 18:00 *	<b>Alexey Khmelev</b> MODEL REPRESENTATIONS AND INSILICO STUDY OF BACTERIAL POPULATION DYNAMICS Amur State University
18:00 – 18:20 *	<b>Artyom Gromyko</b> MATHEMATICAL MODELING OF POPULATION DYNAMICS OF SEX-CHANGING MARINE ORGANISMS Far Eastern Federal University
16:40 – 18:20	<b>Poster Blitz Session. Sector B</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join">https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join</a>
<b>Location</b>	<b>Advanced Vocational Training Center</b>
16:40 – 17:00 *	<b>Ivan Trefilov</b> PHASE TRANSITION AND CROSSOVERS OF THE SYSTEM OF ISING-LIKE DIPOLES ON THE CAIRO LATTICE Far Eastern Federal University
17:00 – 17:20 *	<b>Eliza Lobanova</b> TEMPERATURE DEPENDENCES OF THE THERMODYNAMIC CHARACTERISTICS OF ARTIFICIAL SPIN ICE ON THE APAMEA LATTICE Far Eastern Federal University
17:20 – 17:40 *	<b>Pavel Ovchinnikov</b> INVESTIGATION OF HIDDEN PERCOLATE PROCESSES IN THE ISING MODEL BY NEURAL NETWORKS ALGORITHMS Far Eastern Federal University
17:40 – 18:00 *	<b>Vlada Borisova</b> IMPLEMENTATION OF THE SHORE QUANTUM FACTORING ALGORITHM Far Eastern Federal University
18:00 – 18:20 *	<b>Valentina Akmaeva</b> ALGORITHM FOR PARAMETERIZATION OF THE SEARCH FOR A GUARANTEED SOLUTION TO A QUANTILE OPTIMIZATION PROBLEM Moscow Aviation Institute (National Research University)
16:40 – 18:20	<b>Poster Blitz Session. Sector C</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join">https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join</a>
<b>Location</b>	<b>Advanced Vocational Training Center</b>
16:40 – 17:00 *	<b>Maria Donskaya</b> NUMERICAL SOLVING THE NON-STATIONARY RADIATION TRANSFER EQUATION USING GRAPHICS PROCESSING UNITS

Time	Announce
	Far Eastern Federal University
17:00 – 17:20 *	<b>Viktoria Evdokimova</b> SPECIFICATION OF LUNG AUSCULTATION SIGNALS BASED ON THE METHODS OF FRACTAL AND MULTIFRACTAL ANALYSIS Amur State University
17:20 – 17:40 *	<b>Alisa Chepikova</b> A DETERMINISTIC MODEL WITH DELAY FOR STUDYING THE DYNAMICS OF CHRONIC LYMPHOLEUKEMIA Amur State University
17:40 – 18:00 *	<b>Daria Bondar</b> USING NEURAL NETWORKS TO PREDICT CANCER IN KHABAROVSK KRAI Pacific State University
18:00 – 18:20 *	 <b>Zaryana Beshtokova</b> NUMERICAL SOLUTION OF THE INTEGRO-DIFFERENTIAL DIFFUSION EQUATION IN A MULTIDIMENSIONAL DOMAIN WITH INHOMOGENEOUS BOUNDARY CONDITIONS OF THE FIRST KIND Institute of Applied Mathematics and Automation KBSC RAS
16:40 – 18:00	<b>Poster Blitz Session. Sector D</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join">https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join</a>
<b>Location</b>	<b>Advanced Vocational Training Center</b>
16:40 – 17:00 *	<b>Angelina Donchak</b> STABILITY ESTIMATES OF MULTIPLICATIVE CONTROL PROBLEM'S SOLUTIONS FOR NONLINEAR REACTION- DIFFUSION MODEL Far Eastern Federal University
16:40 – 17:00 *	<b>Aleksandra Yuzvuk</b> SOLVING SINGULARLY PERTUBED PROBLEMS USING PHISICS INFORMED NEURAL NETWORKS Far Eastern Federal University
17:00 – 17:20 *	<b>Dmitrii Gladkikh</b> USING THE METHOD OF DISCRETE ELEMENTS IN MODELING THE FLOW AROUND OBJECTS OF COMPLEX SHAPE BY AN AIR FLOW Pacific National University
17:20 – 17:40 *	<b>Sofia Smirnova</b> OPTIMIZATION MODELING OF A HYBRID SYSTEM CONTROL OF A MULTI-MODE PLANT IN A SCHEME WITH AN IMPLICIT REFERENCE Amur State University
17:40 – 18:00	 <b>Kirill Bakhtin</b> OPTIMIZATION METHOD IN 2D DC ELECTRIC FIELD






Time	Announce
*	CLOAKING AND SHIELDING Institute of Applied Mathematics FEB RAS Far Eastern Federal University
18:30 – 20:30	<b>Math QUIZ</b>
<b>Location</b>	<b>Advanced Vocational Training Center</b>






**June 14** Wednesday

**Location** Amur State University, Main building

Time	Announce
<b>Plenary Session</b>	
<b>Location</b>	<b>Advanced Vocational Training Center</b>
<b>Chair</b>	<b>Dmitry Reviznikov</b>
9:30 – 10:10	<b>Efim Frisman</b> SIMPLE MATHEMATICAL POPULATION MODELS WITH VERY COMPLICATED DYNAMICS: THEORY AND REALITY (50 YEARS OF RESEARCH AT THE FAR EASTERN SCIENTIFIC CENTER OF THE USSR ACADEMY OF SCIENCES AND THE FAR EASTERN BRANCH OF THE RUSSIAN ACADEMY OF SCIENCES) Institute for Complex Analysis of Regional Problems FEB RAS
10:10 – 10:50	<b>Mikhail Galanin</b> THE TEMETOS SOFTWARE PLATFORM AND ITS APPLICATION FOR SOLVING PROBLEMS OF MATHEMATICAL MODELING Keldysh Institute of Applied Mathematics of Russian Academy of Sciences
10:50 – 11:00	<b>Coffee Break</b>
<b>Plenary Session</b>	
<b>Location</b>	<b>Advanced Vocational Training Center</b>
<b>Chair</b>	<b>Liu Chi</b>
11:00 – 11:40	<b>Ahmed Hendy</b> PRESERVING ENERGY COMPUTATIONAL APPROACH FOR HIGGS BOSON EQUATION IN THE DE SITTER SPACETIME UNIVERSE Institute of Natural Sciences and Mathematics, Ural Federal University
11:40 – 12:20	<b>Nataliya Stankevich</b> BISTABLE MODELS OF THE HODGKIN – HUXLEY TYPE AS NETWORK ELEMENTS WITH PATHOLOGICAL BEHAVIOR Higher School of Economics
12:30 – 13:30	<b>Lunch ('Copernicus' Cafe)</b>
13:40 – 15:40	<b>Hybrid Session I</b> <b>MATHEMATICAL AND OPTIMIZATION MODELING</b>

Time	Announce
	<b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/hvh-6jx-8mi-l9s/join">https://vconf.amursu.ru/rooms/hvh-6jx-8mi-l9s/join</a>
<b>Location</b>	<b>319 B</b>
<b>Chair</b>	<b>Sergey Shary</b>
13:40 – 14:00	<b>Alexander Chebotarev</b> OPTIMAL CONTROL PROBLEMS FOR RADIATIVE HEAT TRANSFER MODELS WITH A DISCONTINUOUS REFRACTIVE INDEX Institute of Applied Mathematic FEB RAS
14:00 – 14:20	<b>Roman Brizitskii</b> BOUNDARY VALUE AND EXTREMUM PROBLEMS FOR REACTION-DIFFUSION CONVECTION EQUATION WITH VARIABLE COEFFICIENTS Institute of Applied Mathematics FEB RAS
14:20 – 14:40	<b>Galina Neverova</b> EVOLUTION OF DIFFERENT PHYTOPLANKTON HAPLOTYPES AS A RESULT OF THE IMPACT OF ZOOPLANKTON Institute of Automation and Control Processes FEB RAS
14:40 – 15:00	<b>Oksana Zhdanova</b> MODELING A PLANKTON COMMUNITY DYNAMICS CONSIDERING THE SELECTIVITY AND ZOOPLANKTON FEEDING SPECIFICITY Institute of Automation and Control Processes FEB RAS
15:00 – 15:20	<b>Oksana Revutskaya</b> EVOLUTIONARY DYNAMICS OF A POPULATION WITH SEX STRUCTURE AND NON – OVERLAPPING GENERATIONS Institute for Complex Analysis of Regional Problems FEB RAS
15:20 – 15:40	 <b>Matvey Kulakov</b> GENETIC DIVERGENCE IN THE SYSTEM OF TWO POPULATIONS COUPLED BY MIGRATION WITH NON-OVERLAPPING GENERATIONS AND DENSITY-DEPENDENT LIMITATION OF GAMETE PRODUCTION Institute for Complex Analysis of Regional Problems FEB RAS
13:40 – 15:20	<b>Hybrid Session II</b> <b>NUMERICAL ALGORITHMS AND COMPUTER SIMULATION</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join">https://vconf.amursu.ru/rooms/wab-lwu-c0r-vqw/join</a>
<b>Location</b>	<b>Advanced Vocational Training Center</b>
<b>Chair</b>	<b>Evgeni Nurminski</b>
13:40 – 14:00	<b>Andrei Sushchenko</b> EXTRAPOLATION IMPROVEMENT ALGORITHMS SONAR IMAGE QUALITY Institute of Applied Mathematics FEB RAS

Time	Announce
14:00 – 14:20	<b>Yuliya Spivak</b> NUMERICAL OPTIMIZATION IN 3D PROBLEMS OF DESIGNING MULTILAYER MAGNETIC SHELLS Institute of Applied Mathematics FEB RAS
14:20 – 14:40	 <b>Alexey Lobanov</b> APPLICATION OF OPTIMIZATION METHODS FOR NUMERICAL SOLUTION OF 3D PROBLEMS OF ELECTROSTATIC CLOAKING Institute of Applied Mathematics FEB RAS
14:40 – 15:00 *	<b>Polina Vornovskikh</b> ON THE LOCALIZATION OF THE DISCONTINUITY SURFACES OF THE SCATTERING COEFFICIENT FOR RADIATIVE TRANSFER EQUATION Institute of Applied Mathematics FEB RAS
15:00 – 15:20	<b>Dmitrii Tverdyi</b> ON EFFICIENCY OF PARALLEL ALGORITHMS FOR NUMERICAL SOLUTION OF SOME MODEL PROBLEMS OF FRACTIONAL DYNAMICS Institute of Cosmophysical Research and Radio Wave Propagation FEB RAS
13:40 – 15:40	<b>Hybrid Session IV</b> <b>MODELS OF CONTROL THEORY &amp; APPLIED ALGORITHMS</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/hkr-d9v-48k-vxr/join">https://vconf.amursu.ru/rooms/hkr-d9v-48k-vxr/join</a>
<b>Location</b>	<b>329</b>
<b>Chair</b>	<b>Alexander Morozov</b>
13:40 – 14:00	<b>Larisa Nikiforova</b> DEVELOPMENT OF A PERIODIC ADAPTIVE-ROBUST CONTROL SYSTEM FOR A PLANT WITH AN INPUT DELAY Amur State University
14:00 – 14:20	<b>Elena Amosova</b> NUMERICAL ADAPTED SIMULATION OF HYDRODYNAMIC PROCESSES OF COASTAL ZONES Institute of Applied Mathematics FEB RAS
14:20 – 14:40 *	 <b>Pavel Maksimov</b> APPLICATION OF NEURAL NETWORKS IN SOLVING OF BOUNDARY VALUE PROBLEMS FOR NONLINEAR ORDINARY DIFFERENTIAL EQUATIONS Far Eastern Federal University
14:40 – 15:00 *	 <b>Stanislav Kuzora</b> STUDY OF THE DYNAMICS OF THE FACTORS OF INFLUENCE ON THE EFFE

Time	Announce
	Far Eastern Federal University
15:00 – 15:20	 <b>Alexey Golubev</b> AUV MOTION CONTROL UNDER CONSTRAINTS ON THE GENERALIZED COORDINATES, VELOCITIES AND ACCELERATIONS Ishlinsky Institute for Problems in Mechanics RAS
15:20 – 15:40	<b>Lev Maergoiz</b> MODEL FOR OPTIMAL CONTROL THE ACTIVITY MODE OF THE POLLUTION SOURCES LOCATED IN A MEGACITY Federal Research Center “Krasnoyarsk Scientific Center of the Siberian Branch of the RAS”
15:40 – 16:00	<b>Coffee Break</b>
16:00 – 17:20	<b>Hybrid Session I</b> <b>MATHEMATICAL AND OPTIMIZATION MODELING</b> <b>Web link for on-line connection</b> <a href="https://vconf.amursu.ru/rooms/hvh-6jx-8mi-l9s/join">https://vconf.amursu.ru/rooms/hvh-6jx-8mi-l9s/join</a>
<b>Location</b>	<b>319 B</b>
<b>Chair</b>	<b>Gennadiy Alekseev</b>
16:00 – 16:20	 <b>Alexander Nee</b> THREE-DIMENSIONAL SIMULATION OF CONJUGATE HEAT TRANSFER BY THE HYBRID LATTICE BOLTZMANN METHOD National Research Tomsk Polytechnic University
16:20 – 16:40	 <b>Sergey Chuprov</b> THEORETICAL AND INFORMATIONAL ANALYSIS OF THE MODEL OF THE SELF-ORGANISATION OF AN INDUSTRIAL SYSTEM Baikal State University
16:40 – 17:00	 <b>Zhozil Takhirov</b> ON THE EXISTENCE OF CLASSICAL SOLUTIONS OF THE AGGREGATION MODEL WITH LOGISTIC SOURCES Institute of Mathematics
17:00 – 17:20	 <b>Andrey Kovtanyuk</b> MATHEMATICAL MODELING OF OXYGEN TRANSPORT FROM A CAPILLARY TO TISSUE Far Eastern Federal University, Technical University of Munich
16:00 – 17:20	<b>Hybrid Session II</b> <b>NUMERICAL ALGORITHMS AND COMPUTER SIMULATION</b>
<b>Location</b>	<b>Advanced Vocational Training Center</b>
<b>Chair</b>	<b>Efim Frisman</b>
16:00 – 16:20	<b>Gleb Vodinchar</b>



Time	Announce
	<p>COMPILATION OF GEODYNAMO SPECTRAL MODELS BY THE COMPUTER ALGEBRA METHODS Institute of Cosmophysical Research and Radio Wave Propagation FEB RAS</p>
16:20 – 16:40 *	<p><b>Evgenii Kazakov</b> SIMULATION OF STANDARD REGIMES IN AN HEREDITARY SERIAL DYNAMO MODEL Institute of Cosmophysical Research and Radio Wave Propagation FEB RAS</p>
16:40 – 17:00	<p> <b>Valery Zorkaltsev</b> THE METHOD OF INTERIOR POINTS: PAST AND FUTURE Baikal State University</p>
17:00 – 17:20 *	<p> <b>Alexander Knyazev</b> COMPARATIVE ANALYSIS OF METHODS FOR ASSESSING THE DYNAMICS OF MORTALITY OF LAKE BAIKAL FISH BASED ON COMPUTATIONAL EXPERIMENTS Baikal State University</p>
16:00 – 17:20	<p><b>Session V</b> <b>COMPUTING SYSTEMS, HIGH PERFORMANCE COMPUTING AND APPLICATIONS</b></p>
<b>Location</b>	<b>329</b>
<b>Chair</b>	<b>Evgeniy Shelenok</b>
16:00 – 16:20 *	<p><b>Artem Androsov</b> INTVALPY – A PYTHON INTERVAL COMPUTATION LIBRARY Federal Research Center for Information and Computational Technologies</p>
16:20 – 16:40	<p><b>Mikhail Babenko</b> HIGH-SPEED CHINESE REMAINDER THEOREM North-Caucasus Federal University</p>
16:40 – 17:00 *	<p><b>Alina Chusova</b> MODELING CACHE CONTENTION IN A MULTICORE PROCESSOR Far Eastern Federal University</p>
17:00 – 17:20	<p><b>Anton Demin</b> MODELING THE HEAT TREATMENT OF BRIQUETTED CHARGE IN THE PRODUCTION OF FOAM GLASS Sevastopol State University</p>
19:00	<p><b>Boat Party</b> <b>The Gathering Place</b> (In front of Armenia Hotel, Krasnoflotskaya St, 147)</p>

**June 15** Thursday

**Location** Amur State University, Main building

Time	Announce
<b>Plenary Session</b>	
<b>Location</b>	<b>Advanced Vocational Training Center</b>
<b>Chair</b>	<b>Evgeni Nurminski</b>
9:30 – 10:10	<b>Evgeniy Shelenok</b> STRUCTURAL AND PARAMETRICAL SYNTHESIS OF NONLINEAR REPETITIVE CONTROL SYSTEM ALGORITHMS FOR ONE CLASS OF NON – AFFINE PLANTS Pacific National University
10:10 – 10:50	<b>Sergey Shary</b> INTERVAL SYSTEMS OF EQUATIONS AND THEIR SOLUTION Federal Research Center for Information and Computational Technologies
10:50 – 11:30	<b>Alexander Morozov</b> METHODS FOR MODELING AND IDENTIFYING DYNAMIC SYSTEMS WITH INTERVAL PARAMETERS Federal Research Center «Computer Science and Control» of the Russian Academy of Sciences
11:30 – 11:40	<b>Coffee Break</b>
11:40 – 12:00	<b>Session I</b> <b>MATHEMATICAL AND OPTIMIZATION MODELING</b>
<b>Location</b>	<b>Advanced Vocational Training Center</b>
<b>Chair</b>	<b>Mikhail Stepovich</b>
11:40 – 12:00	<b>Gennadiy Alekseev</b> ANALYSIS AND OPTIMIZATION IN DESIGN PROBLEMS FOR INVISIBILITY DEVICES WITH USING ELLIPTIC AND HYPERBOLIC METAMATERIALS Institute of Applied Mathematics FEB RAS
12:00 – 12:20 *	<b>Tim Seleznev</b> INVERSE PROBLEM FOR A MODEL OF CEREBRAL OXYGEN TRANSPORT Far Eastern Federal University
12:20 – 12:40 *	<b>Alexander Zhiltsov</b> SOLVING EQUILIBRIUM PROBLEM OF AN ELASTIC BODY WITH A DEFLATED THIN RIGID INCLUSION USING THE DECOMPOSITION METHOD AND THE NEWTON METHOD Far Eastern State Transport University
12:40 – 13:00	<b>Nadezhda Maksimova</b> ON THE UNIQUENESS OF THE SOLUTION OF THE PROBLEM OF MULTIPLICATIVE CONTROL FOR THE DIFFUSION – DRIVE MODEL OF THE CHARGING OF AN INHOMOGENEOUS POLAR DIELECTRIC

	Amur State University
13:00 – 13:20 *	<b>Ilya Manzhula</b> ON NUMERICAL SIMULATION OF PHYSICAL PROCESSES IN A NANOFUID – BASED SOLAR COLLECTOR Computing Center FEB RAS
11:40 – 13:20	<b>Session II</b> <b>NUMERICAL ALGORITHMS AND COMPUTER SIMULATION</b>
<b>Location</b>	<b>319 B</b>
<b>Chair</b>	<b>Galina Neverova</b>
11:40 – 12:00	<b>Elena Amosova</b> VARIATIONAL METHODS FOR ISOGOMETRIC INTERPOLATION OF A TWODIMENSIONAL SURFACE Institute of Applied Mathematics FEB RAS
12:00 – 12:20	<b>Alexey Kolobov</b> INDIVIDUAL – BASED APPROACH TO MODELING THE DYNAMICS OF FOREST STANDS Institute for Complex Analysis of Regional Problems FEB RAS
12:20 – 12:40 *	<b>Vitaly Stolyarov</b> MATHEMATICAL METHODS AND ALGORITHMS FOR COMPUTER IMAGE PREPARATION IN THE RECOGNITION OF TEXTS MADE BY LASER ENGRAVING Komsomolsk-na-Amure State University
12:40 – 13:00 *	<b>Anna Karpenko</b> APPLICATION OF COMPUTER MODELING METHODS FOR THE GENERATION OF POTENTIAL DRUGS AGAINST LEUKEMIA National Academy of Sciences of Belarus
13:00 – 13:20	<b>Alexei Kashirin</b> INVESTIGATION OF ILL-POSED BOUNDARY INTEGRAL EQUATIONS FOR THE THREE-DIMENSIONAL ACOUSTIC SCATTERING PROBLEM Computing Center FEB RAS
13:30 – 14:30	<b>Lunch ('Copernicus' Cafe)</b>
14:45 – 17:00	<b>City Bus Tour</b> <b>The Gathering Place</b> (the point is the hall of the main building of Amur State University)
18:00	<b>Conference Dinner</b> (Public Cultural Center Restaurant, Lenin St., 100)



**June 16** Friday

**Location** Amur State University, Main building

<b>Time</b>	<b>Announce</b>
8:00 – 8:30	<b>The Gathering Place</b> (the point is the hall of the main building of Amur State University)
11:00 – 11:30	<b>Evgeni Nurminski</b> BIG OPTIMIZATION AND TRANSPORTATION PROBLEMS Far Eastern Federal University
11:30 – 12:00	<b>Sergey Gordin</b> MATHEMATICAL MODEL OF A HOT WATER BOILER AND ITS EXPERIMENTAL TESTING Komsomolsk-na-Amure State University
12:00 – 12:30	<b>Elena Veselova</b> SETTING UP GRID PARAMETERS FOR NUMERICAL IMPLEMENTATION OF THE 2D LANDAU – KHALATNIKOV MODEL IN COMSOL MULTIPHYSICS Amur State University
12:30 – 13:00	<b>Alexander Morozov</b> INTERPOLATION APPROACH TO SOLVING FRACTIONAL DIFFERENTIAL EQUATIONS WITH INTERVAL ORDERS OF DERIVATIVES Federal Research Center «Computer Science and Control» of the Russian Academy of Sciences
13:00 – 14:00	<b>WORKSHOP CLOSING</b>
14:00 – 18:00	<b>SOCIAL PROGRAM</b>