Frontiers of Nonlinear Physics 2024

SUNDAY, September 1

<table>
<tr><td>10:00 – 14:00</td><td colspan="3">REGISTRATION</td></tr>
<tr><td>14:00</td><td colspan="3">DEPARTURE FROM MOSCOW</td></tr>
<tr><td>14:10 – 15:30</td><td colspan="3">LUNCH</td></tr>
<tr><td>15:30 – 16:00</td><td colspan="3">OPENING SESSION (Hall A)</td></tr>
<tr><td>16:00 – 17:30</td><td colspan="3">PLENARY SESSION 1 (Hall A)
Jianda Shao (Shanghai Inst. of Optics and Fine Mechanics, China). Status of SEL-100PW laser facility Project
Ivan Oseledets (AIRI Inst. & Skoltech, Russia). Efficient solution of physical problems using modern methods: neural networks, tensors, hybrid approaches?
Evgeny Kuznetsov (Skoltech, Russia). Formation and stability of magnetic filaments in convective zone of the Sun</td></tr>
<tr><td>17:30 – 18:00</td><td colspan="3">COFFEE BREAK</td></tr>
<tr><td rowspan="2">18:00 – 20:00</td><td>HALL A</td><td>HALL B</td><td>HALL C</td></tr>
<tr><td>W3. Sources and applications of strong microwaves, modern trends in nuclear fusion
Ion Sources
3.1 Vadim Skalyga (Inst. of Applied Physics RAS, Russia). Prospects of multicharged ions formation in a dense ECR plasma, sustained by powerful millimeter waves (invited)
3.2 Shixiang Peng (Peking University, China). High Intensity Compact 2.45 GHz PMECR Ion Source and Its Fundamental Physics (invited)</td><td>W2. Extreme-field physics and nonlinear processes in laser-matter interactions
2.1 Andrey Shaykin (Inst. of Applied Physics RAS, Russia). 2PW OPCPA renewed PEARL facility
2.2 Zhaoyang Li (Shanghai Inst. of Optics and Fine Mechanics CAS, China). Development considerations for ultra-intense ultrashort lasers (invited)
2.3 Efim Khazanov (Inst. of Applied Physics RAS, Russia). Grating compressor optimization aiming maximum focal intensity (invited)</td><td>W1. Nonlinear dynamics and its applications in geophysics and astrophysics
Ocean & Atmosphere
1.1 Daniil Sergeev (Inst. of Applied Physics RAS, Russia). Microphysics of the air-sea interaction at high winds and its role in the dynamics and thermodynamics of severe sea storms (invited)
1.2 Alexandra Kuznetsova (Inst. of Applied Physics RAS, Russia). Waves and atmosphere modeling in severe weather conditions</td></tr>
</table>

	3.3 **Evgeny Donets** (*Joint Inst. for Nuclear Research, Russia*). Basic research with Electron String Ion Sources (ESIS) (*invited*) 3.4 **Sergey Bogomolov** (*Joint Inst. for Nuclear Research, Russia*). Intense ion beams of rare enriched isotopes for SHE synthesis 3.5 **Yuting Lu** (*Inst. of Modern Physics CAS, China*). A 45 GHz gasdynamic ECR ion source developed at IMP 3.6 **Ivan Izotov** (*Inst. of Applied Physics RAS, Russia*). Proton beam formation at the injector prototype for DARIA accelerator-based neutron source 3.7 **Dmitry Pugachev** (*Joint Inst. for Nuclear Research, Russia*). Preliminary tests of the DECRIS-5M ion source	2.4 **Yuxing Han** (*Shanghai Inst. of Optics and Fine Mechanics CAS, China*). Reflection pulse compression grating-A new look at an old problem (*invited*) 2.5 **Sergey Mironov** (*Inst. of Applied Physics RAS, Russia*). State of the art and future trends in post-compression of high-power laser pulses 2.6 **Yan Sun** (*Shanghai Inst. of Optics and Fine Mechanics CAS, China*). Rare earth ions doped multicomponent glasses in fiber lasers and amplifiers	1.3 **Dmitri Kondrashov** (*University of California, Los Angeles, USA*). Theory-guided ML for accurate prediction of summertime Arctic Sea ice 1.4 **Michael Kurgansky** (*A.M. Obukhov Inst. of Atmospheric Physics*). Mean flow induced by longitudinal libration of a fluid-filled rotating container bounded by two conical surfaces (*invited*) 1.5 **Jingfang Fan** (*Beijing Normal University, China*). Statistical physics approaches to the complex Earth system (*invited*) 1.6 **Andrey Evtushenko** (*Inst. of Applied Physics RAS, Russia*). Analysis of sprite activity in Russia 1.7 **Aleksei Seleznev** (*Inst. of Applied Physics RAS, Russia*). Observed and simulated nonlinearity of ENSO
20:00	**WELCOME RECEPTION**		

<table>
<tr><td>7:30 – 9:00</td><td colspan="3">BREAKFAST</td></tr>
<tr><td>9:00 – 11:00</td><td colspan="3">PLENARY SESSION 2 (Hall A)
Liangliang Ji (Shanghai Inst. of Optics and Fine Mechanics, China). Extreme field physics and the 10/100 PW lasers at SIOM
Alexander Karpov (Joint Inst. for Nuclear Research, Russia). Superheavy elements at JINR, Dubna
Gregory Denisov (Inst. of Applied Physics RAS, Russia). Gyro-devices. State-of-the-art and trends of development
Mikhail Starodubtsev (Inst. of Applied Physics RAS, Russia). Key technologies for XCELS</td></tr>
<tr><td>11:00 – 11:30</td><td colspan="3">COFFEE BREAK</td></tr>
<tr><td rowspan="2">11:30 – 14:00</td><td>HALL A</td><td>HALL B</td><td>HALL C</td></tr>
<tr><td>W3. Sources and applications of strong microwaves, modern trends in nuclear fusion
Relativistic Electronics
3.8 Andrey Arzhannikov (Budker Inst. of Nuclear Physics RAS, Russia). Nonlinear processes in beam-plasma system at pumping plasma waves by high-current REB (invited)
3.9 Stanislav Sinitsky (Budker Inst. of Nuclear Physics RAS, Russia). Pumping waves in vacuum and plasma with a high-current electron beam for generation of a multi-megawatt flux of mm/submm-radiation (invited)
3.10 Nikolai Peskov (Inst. of Applied Physics RAS, Russia). Sub-GW / sub-THz Cherenkov masers with 2D-periodic slow-wave structures</td><td>W2. Extreme-field physics and nonlinear processes in laser-matter interactions
2.7 Sergey Morozov (Inst. for Physics of Microstructures RAS, Russia). Stimulated Emission in HgCdTe-based Quantum Wells: Toward Continuous Wave and Low threshold Lasing in THz range (invited)
2.8 Valery Bychenkov (Lebedev Physical Inst. RAS, Russia). On the way to effective laser-based radiation-nuclear sources (invited)
2.9 Sergey Makarov (Joint Inst. for High Temperatures RAS, Russia). High resolution x-ray imaging of microscale plasma hydrodynamics phenomena with XFEL probe: advantages and limits at modern facilities (invited)</td><td>W1. Nonlinear dynamics and its applications in geophysics and astrophysics
Astrophysics & Geophysics
1.8 Maksim Barkov (INASAN, Russia). Fast Radio Bursts in binary systems (invited)
1.9 Nikolay Emelyanov (Inst. of Applied Physics RAS, Russia). A model of electron acceleration in the chromospheres of the Sun. Generation of super-Dreicer electric field by a nonlinear Alfven wave in footpoints of magnetic loops</td></tr>
</table>

	3.11 **Vladimir Bratman** (*Ariel University, Israel*). Permanent micro-undulators from magnetized helices (*invited*) 3.12 **Ilya Bandurkin** (*Inst. of Applied Physics RAS, Russia*). Concept of a compact EUV FEL with a micro-undulator 3.13 **Naum Ginzburg** (*Inst. of Applied Physics RAS, Russia*). Progress in development of high power relativistic sources of coherent millimeter and sub-millimeter radiation (*invited*) 3.14 **Valentin Ivanov** (*Budker Inst. of Nuclear Physics RAS, Russia*). Development the 50-MW S-band klystron	2.10 **Aleksandr Soloviev** (*Inst. of Applied Physics RAS, Russia*). Laser plasma interaction at the petawatt laser complex PEARL (*invited*) 2.11 **Song Li** (*Shanghai Inst. of Optics and Fine Mechanics CAS, China*). Bright betatron hard X-ray source developed at SIOM using laser wakefield acceleration 2.12 **Maria Rakitina** (*Lebedev Physical Inst. RAS, Russia*). Acceleration of particles from targets with controlled preplasma 2.13 **Anna Bogatskaya** (*Lebedev Physical Inst. RAS, Russia*). Self-organization of plasma nanostructures during the tightly focused femto-second laser pulse exposure in the volume of transparent dielectrics 2.14 **Alexander Popov** (*Lomonosov Moscow State University, Russia*). Laser wave scattering from plasma as a way of bulk material self-organization under the intense femtosecond laser pulse exposure	1.10 **Dmitry Mukhin** (*Inst. of Applied Physics RAS, Russia*). Identification and analysis of mid-latitude atmospheric regimes with hidden Markov models 1.11 **Andrey Gavrilov** (*Inst. of Applied Physics RAS, Russia*). Estimation of forced climate response in ensembles of realizations 1.12 **Marina Grinberg** (*Lobachevsky State University of Nizhny Novgorod, Russia*). Signaling is the most sensitive process of plants when influenced by low-intensity astro- and geophysical factors 1.13 **Evgeny Loskutov** (*Inst. of Applied Physics RAS, Russia*). Using empirical modeling approach for the estimation real-world system's stability to strong perturbations: stability of the paleoclimate in the Pleistocene epoch
14:00	*Arrival in Uglich*		
14:00 – 15:30	LUNCH		
15:30 – 18:00	**Uglich city tour**		

18:00 – 20:00	**POSTER SESSION** **Workshop I and II** 1. **Roman Zemskov** (*Inst. of Applied Physics RAS, Russia*). Laboratory modeling of YSO jets collimation by a large-scale divergent interstellar magnetic field 2. **Alexander Kotov** (*Inst. of Applied Physics RAS, Russia*). Retrieval of the wavefront of laser beam based on the analysis of the intensity distribution at the focus using convolutional neural networks 3. **Kirill Glushkov** (*Inst. of Applied Physics RAS, Russia*). Development and initial findings of a few-cycle CEP-stable femtosecond laser source 4. **Alexey Sidnev** (*Inst. of Applied Physics RAS, Russia*). Multi-beam focusing features of XCELS exawatt laser facility 5. **Mikhail Zolotavin** (*Inst. of Applied Physics RAS, Russia*). Spatio-temporal dynamics of femtosecond laser pulses during apodization by a serrated diaphragm 6. **Dmitry Kiselev** (*Inst. of Applied Physics RAS, Russia*). Smoothing of fluence fluctuations of intense femtosecond laser beams in asymmetric compressors 7. **Anahit Nikoghosyan** (*Yerevan State University, Armenia*). THz radiation in a nonlinear waveguide 8. **Valeriy Vdovin** (*Inst. of Applied Physics RAS, Russia*). Periodic Principal Component Method Unveiling Spectral Dynamics of the PSR B0329+54 Radio Emission 9. **Dmitry Mukhin** (*Inst. of Applied Physics RAS, Russia*). Bayesian stochastic recurrent neural network for modeling atmospheric regimes 10. **Roman Samoilov** (*Inst. of Applied Physics RAS, Russia*). Study of the reproducibility of mid-latitude atmospheric circulation regimes by the Earth System model of the INM RAS 11. **Anton Nechaev** (*Inst. of Applied Physics RAS, Russia*). Analytical model of a magnetopause current sheet with an arbitrary particle energy distribution and its stability 12. **Ioann Melnikov** (*Inst. of Applied Physics RAS, Russia*). Exact solutions of shallow water equations over seamounts: generalization of the Carrier-Greenspan transform 13. **Olga Zubareva** (*Institute of Electrophysics, UB RAS, Russia*). Features of electron runaway in a gas gap with an inhomogeneous electric field

	14. **Aleksey Kuznetsov** (*Inst. of Applied Physics RAS, Russia*). Quasilinear approach to magnetic turbulence in anisotropic plasma 15. **Daniil Tumachev** (*Landau Institute for Theoretical Physics Russian Academy of Sciences, Russia*). Experimental observation of super anti-cyclone in rotating cube 16. **Andrey Kochetov** (*Inst. of Applied Physics RAS, Russia*). The numerical simulations of reflection index dynamics of incident radio wave coursed by an electromagnetically driven Langmuir turbulence in a smoothly inhomogeneous plasma layer 17. **Ilias Khairulin** (*Inst. of Applied Physics RAS, Russia*). Generation of ultrashort deep UV pulses at the third harmonic of the optical field by Na atoms in the two-photon Rabi-flopping regime 18. **Kirill Kolupaev** (*Skolkovo Inst. of Science and Technology, Russia*). Simple method for creating ultraviolet radiation with orbital angular momentum through laser-plasma interactions 19. **Yu. M. Zaslavsky** (*Inst. of Applied Physics RAS, Russia*). On the analysis of the acoustic field during scattering at a periodically uneven interface 20. **Yu. M. Zaslavsky** (*Inst. of Applied Physics RAS, Russia*). On the parametric interaction of seismic waves emitted by a vibration source
20:00 – 21:00	DINNER
21:30	EVENING PROGRAM: Music concert

<table>
<tr><td>7:30 – 9:00</td><td colspan="3">BREAKFAST</td></tr>
<tr><td>9:00 – 11:00</td><td colspan="3">PLENARY SESSION 3 (Hall A)
Huanyu Zhao (Inst. of Modern Physics CAS, China). High intensity ion beams for HIAF: challenges and perspectives
Anatoly Krasilnikov (ITER Project Center, ROSATOM, Russia). Research at ITER, TRT creation and participation in BEST – the next step on the way to creation of thermonuclear fusion reactor in Russia
Andrey Gritsun (Marchuk Inst. of Numerical Mathematics RAS, Russia). National model of the Earth's climate system: current state, areas of use and development prospects</td></tr>
<tr><td>11:00 – 11:30</td><td colspan="3">COFFEE BREAK</td></tr>
<tr><td>11:30</td><td colspan="3">Arrival in Kostroma</td></tr>
<tr><td rowspan="2">11:30 – 14:00</td><td>HALL A</td><td>HALL B</td><td>HALL C</td></tr>
<tr><td>W3. Sources and applications of strong microwaves, modern trends in nuclear fusion
Fast wave devices
3.15 Nikolay Vinokurov (Budker Inst. of Nuclear Physics RAS, Russia). Energy Conservation Equations of Motion (invited)
3.16 Sergey Samsonov (Inst. of Applied Physics RAS, Russia). Broadband gyrotron-type devices with zigzag quasi-optical transmission line (invited)
3.17 Wenjie Fu (Univ. of Electr. Sci. and Tech. of China). Development of Compact Low-Voltage Medium-Power Millimeter-Wave Gyrotron and Transmission Line (invited)</td><td>W2. Extreme-field physics and nonlinear processes in laser-matter interactions
2.15 Sergey Babin (Inst. of Automation and Electrometry SB RAS, Russia). Effects of nonlinear interaction of modes in CW multicore fiber lasers (invited)
2.16 Ivan Mukhin (Inst. of Applied Physics RAS, Russia). Temporal shaping of narrowband saturate amplified nanosecond pulses
2.17 Qi Lu (Shanghai Inst. of Optics and Fine Mechanics CAS, China). Backpropagation: Towards fast, intelligent and high-precision adaptive interferometric measurement of optical freeform surfaces</td><td>W1. Nonlinear dynamics and its applications in geophysics and astrophysics
Nonlinear Dynamics
1.14 Denis Goldobin (Inst. of Continuous Media Mechanics UB RAS, Russia). High-Order Schemes of Exponential Time Differencing for Stiff Systems with Nondiagonal Linear Part (invited)
1.15 Anatoly Karavaev (Saratov State University, Russia). Assessing the level of cognitive workload and stress using biosignal analysis (invited)</td></tr>
</table>

	3.18 **Andrei Savilov** (*Inst. of Applied Physics RAS, Russia*). Prospects of Creation of Pulsed 1THz High-Harmonic Gyrotrons of the Kilowatt Power Level (*invited*) 3.19 **Yulia Novozhilova** (*Inst. of Applied Physics RAS, Russia*). Enhancement of Megawatt Power Gyrotron Operation Using Injection Locking 3.20 **Dun Lu** (*Univ. of Elect. Sci. and Tech. of China*). Millimeter-wave plasmatron based on gyrotron and transmission line 3.21 **Vladimir Manuilov** (*Inst. of Applied Physics RAS, Russia*). Dynamics of accumulation of electrons reflected from a magnetic mirror in adiabatic and nonadiabatic helical electron beams formation systems 3.22 **Vladimir Zapevalov** (*Inst. of Applied Physics RAS, Russia*). Design of a multi-barrel terahertz gyrotron for DNP/NMR spectroscopy	2.18 **Mikhail Martyanov** (*Inst. of Applied Physics RAS, Russia*). Enhanced Z-scan technique for cubic and quintic nonlinearity measurement 2.19 **Yafei Wang** (*Shanghai Inst. of Optics and Fine MechanicsCAS, China*) DBR lasing by integrating FBGs into germanium-free photosensitive highly Yb3+-doped silica fiber 2.20 **Mikhail Guselnikov** (*ITMO University, Russia*). Two-Photon Resonant Interaction of Few-Cycle Terahertz Waves with Optical Media Vibrational Bond 2.21 **Konstantin Burdonov** (*Inst. of Applied Physics RAS, Russia*). Low power 4-beam coherent beam combining set-up prototype for XCELS project	1.16 **Susanna Gordleeva** (*Lobachevsky State University of Nizhny Novgorod, Russia*). Neuromorphic Memory in Spiking Neuron-Astrocyte Network (*invited*) 1.17 **Vladimir Klinshov** (*Inst. of Applied Physics RAS, Russia*). Neural mass models for the simulation of brain dynamics 1.18 **Yurii Ishbulatov** (*Saratov State University, Russia*). A model dataset to test a method for detection of synchronization between the low-frequency oscillations in the cardiovascular signals 1.19 **Felix Feldchtein** (*Medical Device Consultant, USA*). Fractals and Human Concepts as Intermediate Asymptotics (*invited*)
14:00 – 15:30	LUNCH		
15:30 – 18:00	**Kostroma city tour**		

18:00 – 20:00	**POSTER SESSION** **Workshop III** 1. **Vladislav Kholoptsev** (*Inst. of Applied Physics RAS, Russia*). Effect of electromagnetic field on densification, grain growth and phase transformations during rapid microwave sintering 2. **Xinyu Wang** (*Institute of Modern Physics CAS, China*). Numerical Simulation Results of a Third-Generation ECR Ion Source 3. **Gennadii Sominskii** (*Peter the Great St.Peters. Polytech. Univ., Russia*) Development of Field Emitters Electron-Optical Systems for Sub-Terahertz Gyrotron with an Annular Electron Beam 4. **Bujian Cui** (*Peking University, China*). Progress of antenna type miniaturized permanent magnet 2.45 GHz ECR ion source at Peking University 5. **Ekaterina Novak** (*Inst. of Applied Physics RAS, Russia*). Quasi-analytical models of the gyro-BWO with zigzag quasi-optical microwave system: one-wave and two-wave implementations 6. **Sergey Golubev** (*Inst. of Applied Physics RAS, Russia*). Studies of physical basis of jet propulsion using strongly nonequilibrium plasma of electron cyclotron resonance discharge 7. **Vladislav Zaslavsky** (*Inst. of Applied Physics RAS, Russia*). Experimental studies of operating regimes in planar relativistic surface-wave oscillators with one- and two-dimensional periodic slow-wave structures 8. **Andrey Zuev** (*Inst. of Applied Physics RAS, Russia*). A new “large-orbit” gyrotron concept 9. **Andrey Malkin** (*Inst. of Applied Physics RAS, Russia*). Using quasi-optical approach for synthesis of complex periodic structures for relativistic surface-wave oscillators and amplifiers 10. **Dmitry Sobolev** (*Inst. of Applied Physics RAS, Russia*). Frequency-tunable gyrotrons of the sub-terahertz bandwidth with multi-mirror confocal-type resonators 11. **Evgeniy Semenov** (*Inst. of Applied Physics RAS, Russia*). The code ANGEL as a universal tool for gyrodevices modeling 12. **Pavel Chuvakin** (*Inst. of Applied Physics RAS, Russia*). Mode conversion in electron cyclotron resonance region 13. **Tatyana Gayanova** (*Prokhorov General Physics Institute RAS, Russia*). Optimization of synthesis processes in plasma-chemical chain reactions in Ti-(c)BN/(h)BN and Ti-B powder mixtures initiated by gyrotron radiation 14. **Dominika Krygina** (*Inst. of Applied Physics RAS, Russia*). Project of Powerful Long-pulse THz-band FEL with Talbot-type Cavity: Design and Optimization

	15. **Evhenii Sandalov** (*Budker Inst. of Nuclear Physics RAS, Russia*). Measurements of characteristics of an electron beam – driver for FEL based on the linear induction accelerator 16. **Andrey Ananichev** (*Inst. of Applied Physics RAS, Russia*). Development of the megawatt gyrotron with a frequency of 230 GHZ 17. **Jibo Li** (*Inst. of Modern Physics CAS, China*). Effect of a biased disk on the afterglow characteristic with a superconducting ECR ion source. 18. **Ming Xu** *(Inst. of Plasma Physics CAS, China)*. Multi-scales instabilities in EAST reversed q-profile with qmin=2 under the auxiliary of ECRH/ECCD
20:00 – 21:00	**DINNER**
21:30	**EVENING PROGRAM:** Music concert

7:30 – 9:00	BREAKFAST		
8:00	*Arrival in Yaroslavl*		
9:00 – 11:30	**HALL A**	**HALL B**	**HALL C**
	W3. Sources and applications of strong microwaves, modern trends in nuclear fusion ***Plasma, tokamaks, ECRH (I)*** 3.23 **Alexander *Ustinov*** (*Project Center ITER, Russia*). Development of the electron cyclotron system for ITER project (*invited*) 3.24 **Yang Zhang** (*Inst. of Plasma Physics CAS, China*). Recent progress and plans for fusion program in ASIPP (*invited*) 3.25 **Alexander Shalashov** (*Inst. of Applied Physics RAS, Russia*). Kinetic instabilities of a mirror confined plasma driven by strong electron-cyclotron heating (*invited*) 3.26 **Alexei Popov** (*Ioffe Inst. RAS*). On saturation of induced scattering low-threshold instability in the tokamak edge transport barrier at O1 ECRH 3.27 **Leonid Askinazi** (*Ioffe Inst. RAS*). The effect of accumulation of non-uniformity of the electric field and initiation of the L-H transition during the development of the Geodetic Acoustic Mode in a tokamak 3.28 **Igor Timofeev** (*Budker Inst. of Nuclear Physics RAS, Russia*). Formation of high-beta plasma equilibria in magnetic traps	**W3. Sources and applications of strong microwaves, modern trends in nuclear fusion** ***Microwave Applications*** 3.31 **Valentin Borzosekov** (*Prokhorov General Physics Inst. RAS, Russia*). Microwave discharge in powder mixtures of mineralogical samples for plasma-dust cloud modelling 3.32 **Nina Skvortsova** (*Prokhorov General Physics Inst. RAS, Russia*). Synthesis of micro- and nanostructured materials via chain plasma-chemical reactions initiated by high-power microwave pulses 3.33 **Yuri Lebedev** (*A.V. Topchiev Inst. of Petroch. Synth. RAS, Russia*). Microwave discharge in liquids: physics and some aspects of applications 3.34 **Mikhail Glyavin** (*Inst. of Applied Physics RAS, Russia*). High Power Cyclotron-Resonance Rectenna: “Inverted-Gyrotron”(*invited*) 3.35 **Mikhail Proyavin** (*Inst. of Applied Physics RAS, Russia*). Gyrotron-based setups for low temperature plasma physics (*invited*)	

WEDNESDAY, September 4 (continued)

	3.29 **Sergei Lebedev** *(Ioffe Inst. RAS).* Whistler waves in the ohmically heated plasmas in the TUMAN-3M tokamak 3.30 **Mikhail Viktorov** *(Inst. of Applied Physics RAS, Russia).* Peculiarities of nonthermal electromagnetic emission spectrum of a dense mirror-confined ECR discharge plasma	3.36 **Moritz Pilossof** (Ariel University, Israel). Gyrotrons and applications in Ariel 3.37 **Irina Zotova** *(Inst. of Applied Physics RAS, Russia).* High-gradient acceleration of electrons by relativistic microwave sources (*invited*)	

11:30 – 13:30	Free time in Yaroslavl
13:30	**Departure from Yaroslavl**
13:30 – 15:00	LUNCH
15:00 – 16:30	**PLENARY SESSION 4 (Hall A)** **Evgeny Mareev** (*Inst. of Applied Physics RAS, Russia*). Lightning: more and more puzzles **Petr Bagryansky** (*Budker Inst. of Nuclear Physics RAS, Russia*). Open type magnetic traps in the World and Russia **Nathan Kleeorin** (*Ben Gurion University of the Negev, Israel*). Prediction of solar activity using a neural network controlled by a solar dynamo model
16:00	*Arrival in Tutaev*
17:00 – 19:30	**Tutaev city tour**
20:00	CONFERENCE DINNER

7:30 – 9:00	BREAKFAST		
9:00 – 11:00	**PLENARY SESSION 5 (Hall A)** **Grigory Trubnikov** (*Joint Inst. for Nuclear Research, Russia*). NICA collider complex at JINR: physics and lyrics **Vladimir Kocharovsky** (*Inst. of Applied Physics RAS, Russia*). Decay of a strong discontinuity and current filamentation in plasma **Neelima Gupte** (*Dept. of Physics IIT Madras, India*). Climate network analysis of extreme events: Tropical Cyclones **Alexander Shkurinov** (*Lomonosov Moscow State Unviersity, Russia*). The maser effect in molecular crystals		
11:00 – 11:30	**COFFEE BREAK**		
	HALL A	**HALL B**	**HALL C**
11:30 – 13:30	**W3. Sources and applications of strong microwaves, modern trends in nuclear fusion** ***Plasma, tokamaks, ECRH (II)*** 3.38 **Evgeniy Gusakov** (*Ioffe Inst. RAS, Russia*). Nonlinear wave phenomena in the magnetic fusion ECRH experiments (*invited*) 3.39 **Gleb Kurskiev** (*Ioffe Inst. RAS, Russia*). A fast path to the ion temperatures required for magnetically confined nuclear fusion 3.40 **Elena Soldatkina** (*Budker Inst. of Nuclear Physics RAS, Russia*). Features of plasma confinement in gas-dynamic magnetic mirror trap	**W2. Extreme-field physics and nonlinear processes in laser-matter interactions** 2.22 **Philipp Korneev** (*National Research Nuclear University MEPhI, Russia*). Orbital Angular Momentum exchange in interaction of structured laser beams with electrons and low-density plasma (*invited*) 2.23 **Sergey Rykovanov** (*Skolkovo Inst. of Science and Technology, Russia*). Twisted high harmonics and attosecond pulses in plasma (*invited*) 2.24 **Andrei Savel'ev** (*Lomonosov Moscow State University, Russia*). Electron acceleration with high repetition rate table top lasers (*invited*)	**W1. Nonlinear dynamics and its applications in geophysics and astrophysics** ***Nonlinear waves*** 1.20 **Pavel Berloff** (*Imperial College London, UK*). Oceanic Vortex Pulsars (*invited*) 1.21 **Alexander Dyachenko** *(Landau Inst. for Theoretical Physics, Chernogolovka, Russia*). The Nonlinear Schrödinger Equation and Canonical Transformation (*invited*) 1.22 **Nikolay Zubarev** (*Inst. of Electrophysics, UB RAS, Russia*). Self-similar growth of conic cusps on the liquid metal surface in an electric field (*invited*)

	3.41 **Sergey Neudatchin** (*Kurchatov Inst*.). Analysis of the experiments with neon puffing under ECRH in T-10 tokamak plasmas with tungsten and carbon limiter 3.42 **Denis Samtsov** (*Budker Inst. of Nuclear Physics RAS, Russia*). Upgrade of plasma creation system of GOL-PET facility to increase frequency of the radiation generated in beam-plasma system 3.43 **Yang Zhang** (*Inst. of Plasma Physics CAS, China*). Study of ECRH/ECCD effect on magentic island stabilization in EAST experiment 3.44 **Liqing Xu** (*Inst. of Plasma Physics CAS, China*). Study of Nonlinear Interactions Between Multi-Scale Instabilities in the Core Plasma of EAST with Auxiliary Central Heating	2.25 **Nikolay Andreev** (*Joint Inst. for High Temperatures RAS, Russia*). Experiments and modeling on high energy particles and gamma rays in relativistic laser-matter interaction (*invited*) 2.26 **Igor Kostyukov** (*Inst. of Applied Physics RAS, Russia*). QED cascade multiplicity at laser-solid interaction (*invited*) 2.27 **Nikolai Bukharskii** (*National Research Nuclear University MEPhI, Russia*). Conversion of intense ultrashort laser pulses into strong electromagnetic fields with the use of profiled micro-targets	1.23 **Anatoly Kamchatnov** (*Inst. of Spectroscopy of the Russian Academy of Sciences (ISAN), Russia*). Asymptotic integrability of nonlinear wave equations(*invited*) 1.24 **Daria Gladskikh** (*Lomonosov Moscow State Unviersity & Inst. of Applied Physics RAS, Russia*). Ocean turbulence at large Richardson number 1.25 **Boris Malomed** (*Tel Aviv University, Israel*). Discrete and semi-discrete multidimensional solitons and vortices – established results and novel findings(*invited*)
13:30 – 15:00	LUNCH		
14:00	*Arrival in Dubna*		
15:00 – 17:00	Free time in Dubna		
17:00	**Departure from Dubna**		
17:00 – 17:30	COFFEE BREAK		

THURSDAY, September 5 (continued)

17:30 – 19:00	**PLENARY SESSION 6 & CLOSING** **(Hall A)** **Gabriel Bleotu** (*ELI-NP, Romania*). Post compression experiments for the intensity increase of TW and PW scale **Ilya Abramov** (*Inst. of Applied Physics RAS, Russia*). Extreme ultraviolet light source based on xenon plasma: fundamentals, recent results and prospects for lithography **Alexander Sergeev** (*National Center for Physics and Mathematics, Russia*). Laser physics and optics in the research program of the National Center for Physics and Mathematics
19:00	**CONFERENCE CLOSING**
20:00 – 21:00	DINNER
21:30	**EVENING PROGRAM:** Music concert

FRIDAY, September 6

7:30 – 9:00	BREAKFAST
9:00	**Arrival in Moscow**