

**SYMPOSIUM PROGRAM AND SCHEDULE OF EVENTS**

<b>May 17, Sunday</b>	
09.30-10.30	<b>Registration and coffee break</b>
10.30-11.00	<b>Opening ceremony (S. Bagayev, A. Litvak, E. Giacobino, G. Leuchs)</b>
	PLENARY SESSION. Chair: Bagayev
11.00-11.50	O. Willi (Universität Düsseldorf, Germany) "Laser plasma interaction studies with a 100TW laser pulse"
	ORAL SESSION: <b>High-Field Laser Physics</b> . Chairs: Sergeev
11.50-12.20	G. Mourou (Institut de la Lumière Extrême, France) "Extreme light physics"
12.20-12.50	G. Korn (MPI für Quantenoptik, Germany) "ELI - scientific and organizational structure"
12.50-13.20	E. Khazanov (IAP RAS, Russia) "10 PW prototype for ELI Project"
13.20-14.50	<b>Lunch</b>
	ORAL SESSION: <b>High-Field Laser Physics</b> . Chairs:
14.50-15.20	P. Balcou (CELIA Bordeaux, France) "Advances in short pulse X ray sources from high intensity laser-matter interactions"
15.20-15.50	T. Kühl, (GSI Darmstadt, Germany) B. Aurand, V. Bagnoud, A. Blazevic, S. Borneis, B. Ecker, U. Eisenbarth, J. Fils, S. Goette, D. Hochhaus, P. Neumayer, E. Onkels, O. Rosmej, T. Stoehlker, A. Tauschwitz, B. Zielbauer, D. Zimmer "PHELIX: a petawatt-class laser for experiments in plasma and atomic physics at the heavy-ion accelerators at GSI"
15.50-16.10	V. Strelkov (GPI RAS, Russia), A. Gonoskov, I. Gonoskov, M. Ryabikin "Polarization properties of high harmonics generated via elliptically-polarized laser pulse"
16.10-16.40	S. Sebban (LOA, France) "X ray radiation with lasers"
16.40-17.00	<b>Coffee break</b>
	ORAL SESSION: <b>High-Field Laser Physics</b> . Chairs:
17.00-17.30	M. Kaluza (Universität Jena, Germany) "Visualization of the electron-acceleration process in a table-top laser-plasma accelerator"
17.30-18.00	A. Kim (IAP RAS, Russia), A. Shaikin "Particle acceleration in ultrarelativistic regime by multi-hundred TW laser pulses"
18.00-18.30	V. Trunov (ILP SB RAS, Russia), E. Pstryakov A. Kirpichnikov, V. Petrov, S. Frolov, S. Bagaev "Filamentation and generation of intense low-cycle laser pulses"
18.30-19.00	S. Garnov (GPI RAS, Russia), V. Bukin, A. Ritus, A. Sirotkin, T. Shirokih, A. Stepanov "High-intensity THz sources: fundamentals and applications"
19.00-20.00	POSTER SESSION
20.00-21.30	<b>Welcome party</b>

<b>May 18, Monday</b>	
	<b>ORAL SESSION: Novel Laser Technologies.</b> Chairs:
9.30-10.00	<u>H. Kühn</u> (Universität Hamburg, Germany), A. Kahn, S. Heinrich, K. Petermann, G. Huber "Crystalline sesquioxide channel waveguide lasers produced by pulsed laser deposition"
10.00-10.20	<u>O. Palashov</u> (IAP RAS, Russia), E. Khazanov, I. Mukhin, E. Perevezentsev, A. Vyatkin "High-power diode-pumped Yb:YAG disk laser with cryogenic cooling"
10.20-10.50	<u>M. Fechner</u> (Universität Hamburg, Germany), N.-O. Hansen, A. Richter, N. Thilman, K. Petermann, G. Huber "Praseodymium-doped solid-state lasers in the visible spectral range"
10.50-11.10	<b>Coffee break</b>
11.10-11.30	V. Tsvetkov (GPI RAS, Russia) "High-power diode-pumped solid-state lasers"
11.30-12.00	V. Konov (GPI, Moscow, Russia) "Single-wall carbon nanotubes - a new nonlinear optical material"
12.00-12.20	<u>P. Koopmann</u> , R. Peters, K. Petermann, G. Huber (Universität Hamburg, Germany) "Efficient 2-micron laser operation of Tm-doped Lu <sub>2</sub> O <sub>3</sub> "
12.20-12.50	<b>ISTC Presentation</b>
12.50-14.20	<b>Lunch</b>
	V.S. LETOKHOV MEMORIAL SESSION Chairs: S. Bagayev and E. Vinogradov
14.20-14.40	In Memoriam (V. Balykin)
14.40-15.10	M. Hamamda, G. Dutier, M. Boustimi, V. Bocvarski, J. Grucker, C. Mainos, F. Perales, J. Baudon, <u>M. Ducloy</u> (University of Paris-Nord, France) "New concepts in atom optics and interferometry: negative-index media for matter waves"
15.10-15.40	V. Balykin (ISAN, Russia) "Atomic optics: from fundamental research to applications"
15.40-16.10	P. Banzer, U. Peschel, S. Quabis, <u>G. Leuchs</u> (University Erlangen-Nuernberg, Germany) "The magnetic response of sub-wavelength metallic structures in the optical domain"
16.10-16.30	<b>Coffee break</b>
	<b>ORAL SESSION: New Technological Applications.</b> Chairs:
16.30-17.00	A. Kabashin (LP3, Marseille, France) M. Sentis, Ph. Delaporte, D. Grojo, Th. Sarnet, N. Sanner, O. Uteza "Nanofabrication with pulsed lasers"
17.00-17.30	S. Bagayev, <u>G. Grachev</u> (ILP SB RAS, Russia), A. Ponomarenko, A. Smirnov, M. Khomyakov "Laser-plasma modification of surfaces of metals"
17.30-17.50	<u>S. Zaboltnov</u> (MSU, Russia), P. Perminov, A. Ezhov, I. Dzhun, L. Golovan, P. Kashkarov "Silicon nanocrystal fabrication via laser ablation in liquids"
17.50-18.10	<u>S.M. Arakelian</u> (Vladimir State University, Russia), S.V. Kutrovskaya, A.O. Kucherik, V.G. Prokoshev "Laser-induced micro- nanostructures with driven spatial topology on surface of the materials"
18.10-18.30	<u>A. Manshina</u> (Laser Research Institute, St.P. State University, Russia), Yu. Tver'yanovich, S. Tunik "Novel horizons of laser-induced metal deposition"
18.30-18.50	<u>E. Surmenko</u> (Saratov State Technical University, Russia), T. Sokolova, O. Scherbinina "Study of deposition of high-temperature superconducting coatings by LIBS"
18.50-21.00	<b>Dinner</b>
22.00-24.00	<b>"Nizhny Novgorod at Night" Tour</b>

<b>May 19, Tuesday</b>	
	PLENARY SESSION. <b>Biophotonics</b> Chair:
9.30-10.20	A. Savitsky (A.N. Bach Institute of Biochemistry, Russia) "New genetically engineered chromophores in biophotonics"
	ORAL SESSION. <b>Biophotonics</b> Chair:
10.20-10.50	V. Tuchin (Saratov State University, Russia) "Nanobiophotonics: diagnostics and therapy"
10.50-11.20	O. Faklaris, V. Joshi, J.-P. Boudou, T. Sauvage, M. Sennour, A. Thore, P.A. Curmi, <u>F. Treussart</u> (Ecole Normale Supérieure de Cachan, France) "Photoluminescent diamond nanoparticles as innovative markers for biology. Investigation of their cell internalization pathways"
11.20-11.40	<b>Coffee break</b>
	ORAL SESSION: <b>Biophotonics</b> Chairs:
11.40-12.10	V. Shuvalov (Institute of Fundamental Problems of Biology, Russia) "Femtosecond charge separation in photosystems I and II of green plants and cyanobacteria"
12.10-12.40	V. Zadkov (MSU, Russia) "Laser distillation of chiral molecules from a racemic solution"
12.40-13.10	A. Priezhev (MSU, Russia) "Capillaroscopy as a diagnostic and prognostic tool in in-vivo flow cytometry"
13.10-14.40	<b>Lunch</b>
	ORAL SESSION: <b>Biophotonics</b> Chairs:
14.40-15.10	<u>P. Desbiolles</u> (laboratoire Kastler Brossel, France), M. Gross "High sensitivity holography for biology"
15.10-15.30	G. Gelikonov (IAP RAS, Russia) "Developments in endoscopic OCT"
15.30-15.50	<u>A. Morozov</u> (IAP RAS, Russia), I. Turchin, V. Kamensky, K. Anokhin "Fiber-optic based ultramicroscopy for biological tissue study"
15.50-16.00	<b>Coffee break</b>
16.00-18.30	<b>Institute of Applied Physics RAS tour</b>
18.30-20.00	<b>Dinner</b>
20.00-22.00	<b>Nizhny Novgorod Planetarium Program</b>

<b>May 20, Wednesday</b>	
	<b>ORAL SESSION: High-Field Laser Physics.</b> Chairs:
9.30-10.00	A. Pukhov (Universität Düsseldorf, Germany) "Bright sources of x-rays and energetic particles from relativistic laser-plasmas"
10.00-10.30	<u>A. Savel'ev</u> (MSU, Russia), V. Bychenkov, V. Bolshakov, G. Golovin, D. Uryupina, A. Brantov, K. Ivanov, I. Sidorov, A. Vorobyev, R. Volkov, N. Eremin, A. Paskhalov "Laser particle acceleration and accompanying nuclear processes: experimental and theoretical study"
10.30-10.50	A. Sergeev (IAP RAS, Russia) "GeV ion acceleration in regime of relativistically induced transparency"
	<b>PLENARY SESSION.</b> Chair:
10.50-11.40	F. Marquardt (Universität München, Germany) "Optomechanics - coupling light to mechanical motion"
11.40-12.00	<b>Coffee break</b>
	<b>ORAL SESSION: Quantum Optics.</b> Chairs:
12.00-12.30	<u>E. Giacobino</u> (CNRS, Ecole normale supérieure, France), J. Laurat, J. Ortalo, A. Bramati, P. Lombardi, M. Scherman, O. Mishina "Quantum memories for information networks"
12.30-13.00	<u>A. Goncharov</u> (ILP SB RAS, Russia), A. Bonert, A. Shilov, S. Bagayev "High resolution spectroscopy of cooled and trapped Mg atoms"
13.00-13.20	<u>A. Villar</u> (Max Planck Institute for the Science of Light, Germany), R. Maiwald, A. Golla, S. Heugel, M. Stobińska, M. Sondermann, G. Leuchs "Efficient coupling between a single photon and a single two-level quantum system in free space"
13.20-13.40	<u>S. Heugel</u> (Universität Erlangen-Nürnberg, Germany) A. S. Villar, M. Sondermann, U. Peschel, G. Leuchs "Full absorption of an optical pulse into a Fabry-Perot resonator"
13.40-15.10	<b>Lunch</b>
	<b>PLENARY SESSION.</b> Chair:
15.10-16.00	M. Leduc (l'Institut Francilien de Recherche sur les Atomes Froids (IFRAF), France) "Helium, from quantum physics and BEC to medical imaging"
	<b>ORAL SESSION: Quantum Optics.</b> Chairs:
16.00-16.30	<u>D. Sych</u> (Max Planck Institute for the Science of Light, Germany), D. Elser, Ch. Wittmann, C. Wiechers, J. Fürst, B. Heim, T. Bartley, G. Leuchs "Quantum communication"
16.30-17.00	I. Sokolov (St. Petersburg Polytechnical University, Russia) "Light scattering and localization in optically dense ultracold atomic systems"
17.00-17.30	L. Larger (the P. M. Duffieux Optics Laboratory at the University of Franche-Comté, France) "Phase chaos for secure communications"
17.30-18.00	<u>J. Evers</u> (Max-Planck-Institute for Nuclear Physics, Germany), T. N. Dey, R. Fleischhaker "Effects of density and chirality on light propagation through coherently prepared media"
18.00-18.20	<u>A. Golla</u> (Max Planck Institute for the Science of Light, Germany), R. Maiwald, S. Heugel, A. S. Villar, M. Sondermann, G. Leuchs "Spectroscopy of ytterbium atoms and ions in a hollow cathode lamp for laser locking"
18.20-20.00	<b>Dinner</b>
20.00-21.30	<b>Evening program: Music concert</b>

<b>May 21, Thursday</b>	
	PLENARY SESSION. Chair:
9.30-10.30	<u>S. Kilin</u> (B.I.Stepanov Institute of Physics NASB, Belarus), A. Nizovtsev, A. Pushkarchuk, F. Jelezko, J. Wrachtrup "Quantum optics and quantum informatics with colour centres in nanostructured diamond"
10.30-10.50	<b>Coffee break</b>
	ORAL SESSION. <b>Nanophotonics</b> Chair:
10.50-11.20	E. Vinogradov (ISAN, Russia) "Polaritons: state of the art in resarch and applications"
11.20-11.50	<u>D. Wildanger</u> (MPI Biophysical Chemistry, Germany), E. Rittweger, R. Medda, L. Kastrop, S. W. Hell "STED and related concepts for far-field optical nanoscopy"
11.50-12.20	N. Rosanov (Vavilov Optical State Institute, Russia) "Optical solitons: new types, features, and applications"
12.20-12.50	<u>S.A. Aseyev</u> (ISAN, Russia), B.N. Mironov, V.G. Minogin, S.V. Chekalin, <u>V.S. Letokhov</u> "Development of the methods of observation of femtosecond laser-induced processes with high spatio-temporal resolution"
12.50-13.10	<u>M. Nazarov</u> (MSU, Russia), D. Armand, J.-L. Coutaz, G. Gaborit, F. Garet, I.R. Prudnikov, A.P. Shkurinov "Terahertz surface plasmon interaction on corrugated metal surface"
13.10-14.40	<b>Lunch</b>
	PLENARY SESSION. Chair:
14.40-15.40	C. Chardonnet (CNRS, France) "Long distance optical frequency transfer by internet network with a recopy better than $10^{-19}$ and applications to fundamental physics and geodesy"
	ORAL SESSION: <b>High-Precision Optical Metrology</b> . Chairs:
15.40-16.10	<u>I. Sherstov</u> (Physikalisch-Technische Bundesanstalt, Germany), M. Okhapkin, B. Lipphardt, Chr. Tamm, E. Peik "Single-ion optical frequency standards with $171\text{Yb}^+$ : Measurements of Frequencies and Frequency Ratios"
16.10-16.40	S. Bagayev, <u>S. Chepurov</u> (ILP SB RAS, Russia), A. Dychkov, A. Kashirsky, V. Klementyev, S. Kuznetsov, A. Lugovoy, M. Okhapkin, V. Pivtsov, M. Skvortsov, V. Zakharyash "Femtosecond optical clocks for precise metrology"
16.40-17.00	<b>Coffee break</b>
	ORAL SESSION: <b>High-Precision Optical Metrology</b> . Chairs:
17.00-17.20	<u>N. Kolachevsky</u> (Lebedev Physics Institute, Russia) Yu. Vladimirova, V. Zadkov, A. Akimov, A. Samokotin, A. Sokolov, A. Matveev, V. Sorokin "Frequency modulation spectroscopy of coherent dark resonances: a new experimental tool for high-precision measurements"
17.20-17.40	<u>A. Taichenachev</u> (ILP SB RAS, Russia), V. Yudin "Magnetically induced spectroscopy of strongly forbidden optical transitions: new methods and approaches to atomic clock"
17.40-18.10	<u>J. Friebe</u> (Leibniz University of Hannover, Germany) M. Riedmann, A. Pape, T. Wübbena, E. M. Rasel, W. Ertmer, O. Terra, G. Grosche, B. Lipphardt, K. Predehl, T. Feldmann, H. Schnatz "Improved frequency measurement of the Mg clock transition via a dark telecommunication fiber"
18.10-18.30	I. Kozhevator (IAP RAS, Russia) "Optical interferometry with sub wavelength transverse resolution"
18.30-18.50	<b>Closing Ceremony</b>
19.00-21.00	<b>Symposium Banquet</b>

<b>May 22, Friday</b>	
10.00-13.00	<b>Visit to the Institute for Physics of Microstructures RAS</b>
13.30-18.00	<b>Volga river boat trip</b>

## POSTER SESSION

M. Saigin (MSU, Russia), A. Chirkin "Entangled continuous variable states: generation of four-mode states and two-mode states teleportation"

A.P. Alodjants, I. Barinov (Vladimir State University, Russia), S.M. Arakelian "Quantum memory and phase transition in spatially-periodical structure of polaritonic crystal under the atom-light field interaction"

A. Kucherik (Vladimir State University, Russia), V. Prokoshev, D. Troitckiy, M. Shishkina, S. Arakelian "Laser Doppler diagnostic and mathematical modelling of the capillary blood stream system"

I. Abramov (MSU, Russia), A. V. Andreev "Control of the three-level system generation dynamics by resonance radio frequency field"

A. Antipov, S. Kutrovskaya (Vladimir State University, Russia), A. Kucherik, V. Prokoshev and S. Arakelian "Laser nanophotolithography in multilayer systems"

E. Romanova (IAP RAS, Russia), A. Konyukhov, V. Janyani, T. Benson "Modelling of the ultra-short pulse propagation in defect modes of low-contrast periodic nano-structures in highly non-linear glass"

A. Silaev (IAP RAS, Russia), N. Vvedenskii "Residual quasi-DC current in a plasma produced by a few-cycle laser Pulse"

V. Kostin (IAP RAS, Russia), N. Vvedenskii "Superluminous Laser-Produced Ionization Front as a Source of Broadband terahertz radiation "

A. Korzhimanov (IAP RAS, Russia) "Chaotic oscillations of the surface in super-intense laser interaction with foils"

A. Gonoskov (IAP RAS, Russia) "Proton acceleration in the process of superintense laser pulse interaction with solid structured target"

E. Efimenko (IAP RAS, Russia) "Ionization dynamics of a femtosecond laser pulse tightly focused in gas"

A. Andreev, O. Shoutova, S. Stremoukhov (MSU, Russia) "Ionization and high harmonic generation in laser field of near-atomic strength"

V. Eremin (IAP RAS, Russia) "Fast electron generation in the regime of relativistic self-induced transparency"

U. Wolters, S.T. Fredrich-Thornton, F. Tellkamp, K. Petermann, G. Huber (Universität Hamburg, Germany)

"Photoconductivity in Yb-doped laser materials and its effect on laser operation at high excitation densities"

A. Soloviev (IAP RAS, Russia) "Experimental investigation of PW laser pulse - gas target interaction"

S. Stukachev (IAP RAS, Russia) "Complementary screens method for optical wavefield recording"

A. Novikov (IPM RAS, Russia) "Luminescence properties of SiGe nanostructures with quantum wells and self-assembled nanoislands"

A. Kuzmin (IAP RAS, Russia) "Thermoinduced depolarization and phase distortions in Nd:glass rod active media"

M. Kochetkova (IAP RAS, Russia) "Depolarization compensation in the nonlinear medium with induced birefringent and amplification "

A. Katichev (IAP RAS, Russia), E.A. Sergeeva "Deep fluorescence microscopy imaging of biological tissues with the use of two-photon excited quantum dots"

P. Agrba (IAP RAS, Russia), M. Kirillin, M. Shirmanova, M. Sirotkina, E. Zagainova, V. Kamensky "Contrasting of OCT images of skin in vivo by TiO<sub>2</sub> and SiO<sub>2</sub>/Au nanoparticles"