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UltrafastLight – 2018

International Conference on Ultrafast Optical Science

Preliminary program

Conference is supported by

ФАНО России
ФЕДЕРАЛЬНОЕ АГЕНТСТВО НАУЧНЫХ ОРГАНИЗАЦИЙ

ОЭС
СПЕЦПОСТАВКА

hv photonics

Length of talks:

Plenary – 45 minutes
Invited – 30 minutes
Oral – 15 minutes
Student – 5 minutes

Plenary talks	
Victor Malka, *LOA (CNRS/X/ENSTA) & Weizmann Institute of Sciences*	Manipulating relativistic electrons with lasers: Towards compact plasma accelerators
Peter Thirolf, *Ludwig-Maximilians-University Munich*	Perspectives for high-power laser-driven nuclear physics
Sergey Bulanov, *ELI-Beamline*	(to be announced)
Harald Giessen, *University of Stuttgart*	Marriage of nano- and micro-optics
Serim Ilday, *Bilkent University*	Ultrafast laser-driven self-assembly and self-organization far from equilibrium
Vitaly Konov, *General Physics Institute*	Laser nanoablation – a novel technique for presize structuring and functionalization of diamond
Hong-Bo Sun, *Tsinghua University*	Optoelectronic applications of ultrafast lasers
Stelios Tzortzakis, *Texas A&M University at Qatar*	Molded filaments and applications
Majed Chergui, *Ecole Polytechnique Fédérale de Lausanne*	Ultrafast X-ray and optical studies of materials and molecular system
Uwe Morgner, *Leibniz Universität Hannover*	Parametric Amplification of Few-cycle Optical Pulses
Dag Schmidt, *Menlo Systems*	State of the art precision metrology with Ultra-low-noise Optical Frequency Combs

Section 1. Radiation and nuclear photonics at high fields		
Alexander Andreev	Invited	Efficient generation of attopulses at the interaction of intense laser radiation with the shaped targets
Nikolay Andreev	Invited	High energy electrons in relativistic laser-plasma interaction
Andrey Brantov	Invited	Thz and gamma-ray generation from laser-plasma interaction
Valery Bychenkov	Invited	Laser-triggered charged particles acceleration for nuclear and gamma sources
Alexander Fedotov	Invited	Longitudinal field generation and ion acceleration in undercritical plasmas enhanced by radiation friction
Bjorn Hegelich	Invited	Quantum Effects in Extreme Fields - Ultrahigh Intensity Physics with Ultrafast Lasers
Konstantin Ivanov	Invited	Optimization of laser-plasma coupling at relativistic femtosecond interaction with solids for enhanced hot particles and high energy radiation production
Arkady Kim	Invited	Dense e+e- plasma generation in extreme laser fields
Philipp Korneev	Invited	Magnetized plasma structures production by intense laser radiation
Igor Kostyukov	Invited	Electron acceleration and gamma-ray emission at intense laser–solid interaction
Karl Krushelnik	Invited	Ultra-high intensity laser interaction experiments at the University of Michigan
Tsuneyuki Ozaki	Invited	High-field effects in autoionizing states – high-order harmonics and the four-step model
Sergey Pikuz	Invited	(to be announced)
Alexander Pukhov	Invited	Ultra-high energy density plasmas using nanostructured plasmas

Sergey Rykovanov	Invited	Narrowband Compton scattering sources at high laser intensities
Klaus Spohr	Invited	Harvesting Ultra-Fast Phenomena with the 10 PW Laser System at ELI-NP
Mikhail Starodubtsev	Invited	Experimental studies on plasma physics and particle acceleration on PEARL facility
Aleksei Bashinov	Oral	QED cascade with multipetawatt-class lasers: a road to attosecond-scale highly directed GeV gamma-ray sources
Sergey Bochkarev	Oral	Stochastic electron heating in combined field of several overlapping laser pulses of picosecond duration
Evgeny Efimenko	Oral	Particle trajectories in a pinch regime produced by a petawatt level e-dipole wave
Artem Korzhimanov	Oral	Scalings of sheath-acceleration of protons driven by ultra-intense subpicosecond laser pulses
Victor Kulagin	Oral	Intense Terahertz and Infrared Radiation from Laser Pulse Interaction with Mass-Limited and Gas Targets
Igor Metelskii	Oral	Harmonic generation in inhomogeneous relativistic plasma
Ivan Tsymbalov	Oral	Electrons ejection and acceleration in plasma waves in the relativistic laser-plasma of solid targets
Sergey Makarov	Oral	Determination of the parameters of laser-plasma and FEL sources using LiF crystal as x-ray detector
Sergey Ryazantsev	Oral	Calculation of the X-ray source absolute intensity produced during irradiation of thin flat and structured Si foils by petawatt laser pulses.
Artem Martynenko	Oral	X-ray diagnostics of warm dense matter heated by laser-generated relativistic electrons in Ti wire target.
Evgeny Filippov	Oral	X-ray spectroscopy evidence of plasma shell formation in experiments modeling accretion columns of young stars

Georgy Gospodinov	Student	Optical diagnostics of femtosecond laser plasmas
Denis Gozhev	Student	Optimization studies of high energy electron generation from nanostructure targets.
Iurii Kochetkov	Student	Experimental observation of intense magnetic field in a snail-shaped targets irradiated by a relativistic picosecond laser pulse
Ilia Mordvintsev	Student	The study of ion acceleration by a femtosecond laser pulse of relativistic intensity in laser-plasma interaction with time-of-flight and Thomson parabola mass-spectrometers
Vladislav Prokudin	Student	The study of electron acceleration in relativistic laser plasma through the analysis of trajectories
Alexandra Sen'kevich	Student	Plasma diagnostics based on the scattered harmonics radiation measurements
Olga Vais	Student	Laser pulse diagnostics via direct particle acceleration
Diana Gorlova	Student	Electron bunch formation under action of relativistic laser pulse onto long-scale undercritical plasma

Section 2. Ultrafast phenomena in condensed matter and ionized gases		
Martin Garcia	Invited	Nonthermal phase transitions in silicon and antimony: scaling up ab-initio atomistic simulations
Vitaly Gruzdev	Invited	Cycle-averaged effects in ultrafast high-intensity laser interaction with electrons of wide-band-gap solids: the approximation of low collision rate
Cristian Focsa	Invited	Plume splitting and oscillatory behavior in transient plasmas generated by high-fluence laser ablation in vacuum
Nail Inogamov	Invited	Laser action on bulk or thin targets: duration effects
Lev Mazov	Invited	Femtosecond relaxation dynamics of hot electrons in high temperature cuprate superconductors
Kirill Migdal	Invited	Transport and optical properties of noble metals at two-temperature state
Ivan Oladyshkin	Invited	Role of surface plasmons in laser-induced THz generation from metals
Ilday Ömer	Invited	Ablation-cooled material removal with ultrafast bursts of pulses
Ivan Pavlichenko	Invited	Nanograting structures in transparent dielectric at the nonlinear stage of plasma-resonance instability
Evgeny Perlin	Invited	Nonlinear Absorption of Femtosecond Light Pulses under Conditions of Multiphoton Resonances in Bulk Crystals and Nanostructures
Alexander Popov	Invited	New approach to the problem of THz generation in high-intensity laser field
Baerbel Rethfeld	Invited	Relaxation dynamics of nonequilibrium electrons in laser-excited solids

Andrei Savel'ev	Invited	Self-induced transparency of intense few-cycle terahertz pulses in n-doped silicon
Antonio Santagata	Invited	Laser Induced Breakdown Spectroscopy principles and ultrashort pulses' effects
Razvan Stoian	Invited	Volume nanostructuring with spatio-temporally sculpted laser pulses
Vasily Strelkov	Invited	Role of continuous quasi-stable states in high-order harmonic generation. Resonance-induced modification of harmonic spectrum and phase-locking
Vladimir Zhukov	Invited	Peculiarities of interaction of doughnut-shaped laser pulses with transparent materials
Vladimir Krainov	Invited	High-harmonic generation of atoms and atomic ions near cut off
Sergey Ashitkov	Oral	The behavior metals under ultrafast loading driven by femtosecond laser
Stanislav Bezhanov	Oral	Nonlinear transmission and reflection of a strong terahertz pulse by a metal film
Alexander Frolov	Oral	Dipole structure of terahertz radiation in the interaction of a laser pulse with clusters
Vyacheslav Grishkov	Oral	(to be announced)
Sergey Gudkov	Oral	(to be announced)
Ilias Khairulin	Oral	Attosecond pulse formation in active medium of a plasma-based X-ray laser, dresssed by a strong optical field: analisis and optimization
Sergey Kuznetsov	Oral	Generation of Sub-femtosecond Electron Bunches upon Laser Pulse Propagation through a Sharp Plasma Boundary
Chiara Liberatore	Oral	Large beam effect in structuring of Si surface with ultrashort laser pulse

Ekaterina Migal	Oral	Wavelength scaling of deposited energy density under femtosecond microstructuring in bulk fused silica
Alexander Romanov	Oral	High-order harmonic generation by multielectron atoms in intense ultrashort laser fields
Sergey Romashevskiy	Oral	Layer-by-layer modification of thin-film metal–semiconductor multilayers with Layer-by-layer modification of thin-film metal–semiconductor multilayers with ultrashort laser pulses
Konstantin Vagin	Oral	(to be announced)
Evgeny Gurevich	Oral	Role of hydrodynamic mechanisms in formation of laser-induced periodic surface structures
Petr Kartsev	Oral	Evolution of nonequilibrium state of the high-temperature superconductor after femtosecond laser pulse, studied with numerical simulation
Nelli Gnezdovskaya	Oral	Generation and amplification of THz radiation in plasma channel formed in gas by high-intensity laser field
Kryštof Hlinomaz	Student	Numerical modeling of energy relaxation in molybdenum thin films on soda-lime glass upon irradiation by picosecond laser pulses
Tatiana Mamontova	Student	Dispersion law and damping of electronic high-frequency waves in plasma, formed by the tunnel ionization of atoms

Section 3. Ultrafast laser nanofabrication and nanophotonics		
Francois Courvoisier	Invited	Processing dielectrics with controlled cracks from elliptical Bessel beams
Sergey Kudryashov	Invited	Manipulation by surface plasmon resonances: optical and material aspects
Biljana Gakovic	Invited	Modification of Ti/Zr multilayer by femtosecond laser pulses
Dmitry Ivanov	Invited	Modelling of Short Laser Pulse Nanostructuring of Metals in Different Media
Aleksander Kovačević	Invited	Inducing LIPSS by multi-pass and cross-directional scanning of femtosecond beam over surface of thin metal films
Alex Kuchmizhak	Invited	Ultrafast laser nanofabrication of advanced nanophotonic structures
Pavel Melentiev	Invited	Nanoscale spatial and femtoscale temporal characterization of laser pulses
Godai Miyaji	Invited	Controlling of plasmon damping on nonmetallic gratings excited with intense femtosecond laser pulses
Yoshiki Nakata	Invited	Nanostructures in lattice fabricated by interference laser processing technique
Takashige Omatsu	Invited	Structured Materials by Ultrafast Vortex Pulses Illumination
Viktor Timoshenko	Invited	Silicon-based nanomaterials for biophotonics
Christoph Rehbock	Invited	Nanoparticles fabricated by pulsed laser ablation in liquids and their applications in biomedicine
Nicholas Sanner	Invited	Ultrashort laser ablation of dielectrics
Isabelle Staude	Invited	Active and Nonlinear Semiconductor Metasurfaces

Vasily Temnov	Invited	Ultrafast magneto-elastic interactions at the nano-scale
Michael Tribelsky	Invited	Non-steady effects in resonant scattering of ultrashort laser pulses
George Tsibidis	Invited	Periodic Structure Formation on Dielectrics After Irradiation with ultrashort Pulsed Lasers
Vadim Veiko	Invited	3D-laser densification of porous glass: mechanisms and applications
Oleg Vitrik	Invited	Laser-structured polytetrafluoroethylene superhydrophobic surfaces as a basis of molecular transport system for sers-analyzers of ultra-small analyte concentrations
Ioanna Zergioti	Invited	Laser Direct Printing of nanomaterials for flexible electronic components and sensors
Sergey Odinokov	Invited	Measurements on plasmonic diffraction gratings for nanomotion sensing
Andrey Afanasiev	Oral	The effect of delay time between the pulses of different frequences in surface nanopatterning by two-colored femtosecond pulses
Nick Busleev	Oral	Numerical modeling of electromagnetic response of Si nanosheets covered by plasmonic layers
Pavel Danilov	Oral	High-precision direct laser processing of plasmonic films by structured laser beam
Ivan Moiseev	Oral	Writing of crystalline tracks in glass by Laguerre-Gaussian femtosecond laser beam
Luong Nguyen	Oral	Large-scale laser fabrication of anti-fouling Si surface nanosheet arrays via nanoplasmonic ablative self-organization in liquid CS2 tracked by sulfur dopant
Sergei Pokrovskii	Oral	Femtosecond laser fabrication of topological structures in high-Tc superconducting composites

Nikolay Polushkin	Oral	Phase-change magnetic memory by ultrafast laser patterning of Fe-Al alloys
Irina Saraeva	Oral	Laser ablation thresholds of metals and semiconductors in air and liquid media during fs/ps laser micromachining
Dmitrii Shuleiko	Oral	Fabrication of silicon nanoparticles by pulsed laser ablation of porous silicon in liquids
Mikhail Smayev	Oral	Femtosecond laser direct writing of depressed cladding waveguide in tellurite glass
Pavel Terekhin	Oral	The role of surface plasmon polaritons in laser processing and heating of solids
Daniil Ganin	Oral	Heterochain thermostable polymers for the formation of optical elements
Alexey Porfirev	Oral	Design of diffractive optical elements for laser fabrication of u-shaped element arrays,
Alexey Porfirev	Oral	Tighter focus for ultrashort pulse vector light beams
Varvara Zubyuk	Oral	Controllable reflection of direct-gap semiconductor metasurfaces
Alexander Musorin	Oral	ULTRAFAST DYNAMICS OF MAGNETO-OPTICAL EFFECTS IN NANOSTRCTURED MEDIA WITH ARTIFICIAL DISPERSION
Yaroslav Golubev	Student	The dynamics of laser ablation thresholds of aluminum and steel during double-pulse femtosecond laser action
Mikhail Moskvin	Student	Laser-induced coloration of metals surface
Alena Nastulyavichus	Student	Preparation of bimetallic nanoparticles by laser ablation
Juraj Sladek	Student	Periodic surface structuring of fused silica and ULE glass using femtosecond laser pulses
Nikita Smirnov	Student	One-pulse micro-ablation of steel by ultrashort laser pulses of varying duration

Sofya Umanskaya	Student	Femtosecond laser nanopatterning of thin films at radial and azimuthal polarizations
Roman Yatsuk	Student	Laser-assisted modification of Ti-6Al–4V titanium alloy surface for implantology applications
Margarita Zhilnikova	Student	Laser-assisted generation of elongated Au nanoparticles and analysis of their morphology under pulsed irradiation in water and CaCl2 solutions
Vladislav Koval’	Student	Synthesis of periodical structures in Ag-doped sol-gel films by interference of picosecond laser pulses
Anastasiya Ivanova	Student	Fabrication of hybrid Si-Au nanoparticles by nanosecond laser ablation
Yaroslava Andreeva	Student	Single-shot laser-induced formation of nanoparticles from thin silver films submerged in various liquids

Section 4. Femtosecond non-linear optics. Filamentation. High field THz generation		
Leonid Arantchouk	Invited	Characteristics of guided discharge initiated by femtosecond laser filamentation of 10-100 cm length and 1-ms duration
Ayhan Demircan	Invited	Two-color Femtosecond Soliton Bound States
Evgenii Mareev	Oral	Nonlinear optical properties of CO2 and Xe in sub- and supercritical states: anomalous behavior of nonlinear refraction index and supercontinuum generation
Evgenii Mareev	Oral	Photoacoustic imaging of femtosecond filament in water
Aleksey Murzanev	Oral	The laser plasma filament in the air visualization by the nonlinear phase contrast imaging using Kerr nonlinearity of the fused silica
Aleksey Murzanev	Oral	Ionization and explosion of a spherical water droplet in air by femtosecond laser radiation at intensities of the order of magnitude achieved at laser filamentation
Leonid Golovan	Oral	Nonlinear-Optical Anisotropy in Silicon Nanowire Ensembles
Vladimir Gorelik	Oral	Multifrequency Stimulated Raman Scattering in condensed media under ultrafast laser excitation
Yakov Grudtsyn	Oral	Four-photon absorption measurements in fused silica at 480 nm
Ivan Laryushin	Oral	Generation of terahertz radiation by two-color femtosecond ionizing pulses with arbitrary polarizations of components
Ekaterina Mitina	Oral	Acoustic diagnostics of multiple and superfilamentation under different crossing angles between separate filaments
Dmitrii Pushkarev	Oral	Femtosecond laser superfilamentation under various focusing conditions.

Sergey Stremoukhov	Oral	Quantum-mechanical elaboration for the description of low- and high-order harmonics generated in extended gas media
Pavel Sverbil	Oral	Second and third harmonics generation in photonic crystals under femtosecond laser excitation.
Alexander Zemlyanov	Oral	Control of Multiple Filamentation of TW IR radiation propagating along an air path by means of a deformable mirror
Daria Mokrousova	Oral	Third harmonic generation during interaction of several beams
Alexander Shugurov	Oral	Nonellipsometric electro-optic sampling of terahertz pulses in GaAs
Sergey Sychugin	Oral	Quasistatic fields propagating ahead of ultrashort laser pulses in electro-optic crystals
Olga Kosareva	Oral	(to be announced)
Nikolay Panov	Oral	(to be announced)
Konstantin Dolgikh	Oral	(to be announced)
Daniil Shipilo	Oral	(to be announced)
Irina Nikolaeva	Oral	(to be announced)
Vladislav Pankratov	Oral	(to be announced)

Vladimir Fedorov	Oral	(to be announced)

Section 5. Femtosecond laser photobiology and photochemistry		
Abderrazzak Douhal	Invited	Deciphering the ultrafast dynamics in perovskite/QDs hybrid films
Helge Lemmetyinen	Invited	Photoinduced electron transfer via exciplex formation in diazaporphyrin-porphyrin and porphyrin-pyrene dyads
Petr Sherin	Invited	Molecular UV-filters of the human eye lens: the diversity of the ultrafast mechanisms of the excited state deactivation
Victor Nadtochenko	Invited	Ultrafast Spectroscopy of Optical Phonons and Excitons in Quantum Dots
Nikolay Tkachenko	Invited	Photoinduced charge separation at organic semiconductor interface
Eric Vauthey	Invited	Ultrafast photoinduced symmetry-breaking charge transfer
Evgeni Glebov	Oral	Photophysics and Photochemistry of Platinum Group Metals Complexes
Andrey Mereshchenko	Oral	EXITED-STATE DYNAMICS OF [cucl4]2- and [cubr4]2- COMPLEXES IN SOLUTION
Valentina Mikhailova	Oral	The effect of solvent relaxation time constants on free energy gap law for ultrafast charge recombination following photoinduced charge separation
Denis Poydashev	Oral	Ultrafast Dynamics Induced by Femtosecond Laser Radiation in Mixed Molecular Clusters
Ivan Pozdnyakov	Oral	Ultrafast processes in photophysics of natural fulvic acids
Anton Shushakov	Oral	Primary processes in photophysics and photochemistry of diazide PT(IV) complexes prospective for anti-cancer photodynamic therapy

Roman Pishchalnikov	Oral	Temperature dependence of the water OH-stretch band in the off-resonant Raman spectroscopy: a computational approach, energy transfer and trapping in photosystem I from arthrospira platensis
Tatiana Mikhailova	Student	Dynamic solvent effect and ultrafast charge recombination in excited donor-acceptor complexes
Igor Yermolenko	Student	One-dimensional optimization of the calculation of the probability of electron transitions taking into account one high-frequency vibrational mode

Section 6. Physics and technology of ultrashort laser pulses and innovative femtosecond laser technology		
Efim Khazanov	Invited	Compression after Compressor Approach (CafCA)
Vladimir Chvykov	Invited	Several Technological Approaches for New Generation of Ultra-High Peak and Average Power Ti:Sapphire Laser Systems.
Martin Smrz	Invited	kW-class sub-1-picosecond lasers followed by efficient UV and mid-IR frequency conversion for laser-matter interaction research
Ilday Ömer	Invited	Nonlinear thermodynamics perspective of mode-locking
Ivan Yakovlev	Invited	Stretchers and compressors of chirped pulses – key elements of ultra-high-power laser complexes
Vladimir Molchanov	Invited	High-resolution acousto-optic ultrafast pulse shaping
Fedor Potemkin	Invited	Recent progress in mid-IR(4-5 µm) solid-state femtosecond amplifiers based on Fe2+:ZnSe optically pumped by 3-µm laser
Ihar Babushkin	Oral	Signatures of attosecond-scale electron dynamics in terahertz and higher order Brunel harmonics.
Mikhail Gorbunkov	Oral	Towards chaotic generators of ultrashort light pulses
Vyacheslav Morozov	Oral	High-peak-power diode-pumped picoseconds lasers
Elena Ivanova	Oral	(to be announced)
Ivan Mukhin	Oral	Generation of high intensity few-cycle femtosecond pulses from high power picosecond laser
Andrey Okhrimchuk	Oral	The deformation wave as a factor that controls direct laser writing.
Alexander Lyubimov	Oral	Dielectric diffraction gratings for laser pulse compression
Serafima Filatova	Oral	TIME AND SPECTRAL PULSE DYNAMICS OF A 2-µM HYBRID LASER DURING THE AMPLIFICATION BY

		HOLMIUM-DOPED FIBER AMPLIFIER
Nikolay Dyachkov	Oral	Energy density in a collapsing electromagnetic wave.

Section 7. Femtosecond radiation in spectroscopy and optical frequency metrology		
Arthur Matveev	Invited	(to be announced)
Masayuki Katsuragawa	Invited	Tailored nonlinear optical frequency conversion: toward high resolution spectroscopy in the vacuum ultraviolet wavelength region
Michael Gorodetsky	Invited	(to be announced)
Michael Gubin	TBA	Femtosecond Laser Synthesizer for Methane Reference Oscillator
Akihiro Tomura	TBA	Arbitrary optical waveform at 125THz repetition rate and its application to ultrafast phenomena
Konstantin Zagorulko	Oral	(to be announced)
Elena Kalganova	Oral	Characterization of 1.14 um clock laser by Ti:Sa femtosecond frequency comb
Ilya Zalivako	Oral	Yb:KYW frequency comb for precision spectroscopy of 1s-2s transition in He+
Dmitry Tregubov	Oral	(to be announced)