

Monday

17 June



9:00 - 9:50

Registration

9:50-10:00

Welcome greetings

10:00-11:00

Chairman: Alexey Yulin, ITMO University

Plenary talk

"Computing with Quantum Fluids: putting "Exciton-Polariton Bose Einstein Condensates" into action"

Pavlos Lagoudakis, Skolkovo Institute of Science and Technology

11:00-11:20

Coffee Break ☕

Session A

Chairman: Alexey Yulin, ITMO University

11:20-11:45

Invited talk

"Spin precession resonance in a stirred exciton-polariton condensate"

Ivan Gnusov, Skolkovo Institute of Science and Technology

11:45-12:00

"Exciton localization on magnetic domain wall in MoSe₂-CrI₃ heterostructure"

Vanik Shahnazaryan, ITMO University

12:00-12:15

"Bosonization and nonlinearities in exciton-polariton systems within the path integral approach"

Anna Grudinina, National Research Nuclear University MEPhI

12:15-12:30

"Novel regimes of exciton-polaritons synchronization in a presence of coherent pumping in ring geometry"

Alexey Osipov, ITMO University

12:30-12:45

"Exploration of coupling in spherical voids"

Evgeny Ryabkov, Moscow Institute of Physics and Technology, Skolkovo Institute of Science and Technology

12:45-14:15

Lunch time ☕

Chairman: Maxim Gorlach, ITMO University

14:15-15:15

Planary talk

"Radiation reaction in electromagnetic fields of extreme intensity: from classical to quantum regimes"

Sergey Popruzhenko, National Research Nuclear University MEPhI

Session B

Chairman: Maxim Gorlach, ITMO University

15:15-15:30

"Variational state preparation with noisy trapped-ion quantum computers"

Zahar Sayapin, Skolkovo Institute of Science and Technology

15:30-15:45

"Induced emission in the field of a single-photon wave packet"

Georgii Sizykh, ITMO University

15:45-16:05

Coffee Break ☕

Session C

Chairman: Dmitry Karlovets, ITMO University

16:05-16:20

"Smith-Purcell radiation from metasurface"

Damir Garaev, National Research Nuclear University MEPhI

16:20-16:35

"A Conditionally Exactly Solvable 1D Dirac Pseudoscalar Interaction Potential"

Astghik Ghazaryan, Institute for Physical Research of National Academy of Sciences of Armenia

16:35-16:50

"Nonlinear dynamics of optical Wannier-Stark states in a periodic system of interacting resonators"

Alexey Verbitskiy, ITMO University

16:50-17:05

"Various simplified models of inhomogeneous polarization and their influence on effective properties of piezoceramic composites"

Andrey Nasedkin, Institute of Mathematics, Mechanics and Computer Sciences, Southern Federal University

17:05-17:20

"Simulation of Heat Propagation Processes and Estimation of the Signal-to-Noise Ratio of a Thermoelectric Single Photon Detector"

Astghik Kuzanyan, Institute for Physical Research of National Academy of Sciences of Armenia

Tuesday

18 June



10.00-11.00

Chairman: Maxim Gorlach, ITMO University

Plenary talk

"Quantum optics and quantum acoustics with superconducting quantum systems"

Oleg Astafiev, Skolkovo Institute of Science and Technology

11.00-12.00

Poster session & coffee break ☕

[List of posters](#)

Session D

Chairman: Maxim Gorlach, ITMO University

Invited talk

12.00-12.25

"Quantum machine learning with superconducting integrated circuits"

Gleb Fedorov, Moscow Institute of Physics and Technology

12.25-12.40

"Quantum nonlinear optics with superconducting artificial atoms in waveguide"

Aleksei Dmitriev, Moscow Institute of Physics and Technology

12.40-12.55

Time optimal quantum state transfer in a topological qubit array"

Kseniya Chernova, ITMO University

12.55-13.10

"Nonstationary dynamics of a vortex electron in a magnetic lens"

Dmitrii Grosman, ITMO University

13.10-14.55

Lunch time ☕

Chairman: Valery Uzdin, ITMO University

Plenary talk

14.55-15.55

"Corrections to currents of created particles in the Schwinger effect"

Emil Akhmedov, Moscow Institute of Physics and Technology

Session E

Chairman: Valery Uzdin, ITMO University

15.55-16.10

"Generation of vortex electrons by atomic ionization"

Ilia Pavlov, ITMO University

16.10-16.25

"One-electron quasimolecules in super-strong magnetic field"

Elizaveta Tryapitsyna, ITMO University

16.25-16.45

Coffee Break ☕

Chairman: Dmitry Glazov, ITMO University

Plenary talk

16.45-17.45

"Quantum technologies and complexity of quantum states"

Aleksey Fedorov, Russian Quantum Center, MISIS University

Wednesday

19 June



Chairman: Dmitry Gets, ITMO University

Plenary talk

10.00-11.00

"Magnetic metamaterials: initial and current challenges in theoretical description"

Mikhail Lapine, Harbin Engineering University, ITMO University, University of Technology Sydney

11.00-11.20

Coffee break ☕

Session F

Chairman: Dmitry Gets, ITMO University

11.20-11.35

"Engineering orbital topological states in the optical photonic molecule lattice"

Maxim Mazanov, ITMO University

11.35-11.50

"Crystalline topological insulators via accidental mode degeneracies"

Konstantin Rodionenko, ITMO University

11.50-12.05

"Bound states in the continuum in a chain of ceramic discs with structural disorder"

Ravshanjon Nazarov, ITMO University

12.05-12.20

"Non-Hermitian excitations in nonlinear topological lattice"

Vlad Simonyan, ITMO University

12.20-12.35

«Unitary equivalence of twisted quantum states»

Natalya Filina, ITMO

12.35-12.50

"Laser-induced THz spin correlation dynamics in cubic antiferromagnets"

Anatolii Fedianin, Ioffe Institute

12.50-14.20

Lunch time ☕

Session G

Chairman: Dmitry Glazov, ITMO University

14.20-14.45

Invited talk

"Schwinger process on the surface of hot strange star"

Mikalai Prakapenia, ICRANet-Minsk, B. I. Stepanov Institute of Physics

14.45-15.00

"Evaluation of higher-order correlation effects in highly charged ions"

Yury Kozhedub, St. Petersburg State University

15.00-15.15

Coffee Break ☕

15.15-15.30

"Relativistic calculation of the g factor of excited states of lithium-like ions"

Dmitrii Zinenko, St. Petersburg State University

15.15-15.30

"Search for T,P-violating axionlike-particle-mediated interactions in the BaF molecule"

Sergey Prosnjak, Petersburg Nuclear Physics Institute named by B.P. Konstantinov of National Research Centre «Kurchatov Institute»

15.30-15.45

"Axion-induced hybridization of electric and magnetic multipoles"

Timur Seidov, ITMO University

18:00-21:00

Boat trip 🚤

Thursday

20 June



Chairman: Dmitry Karlovets, ITMO University

10.00-11.00

Plenary talk

"Quantum electrodynamics in supercritical field with heavy ions"

Vladimir Shabaev, St. Petersburg State University

11.00-11.20

Coffee break ☕

Session H

Chairman: Dmitry Karlovets, ITMO University

11.20-11.45

Invited talk

"QED calculations of energy levels in highly charged ions"

Aleksei Malyshev, St. Petersburg State University

11.45-12.00

"Theoretical particularities of photon scattering processes in applications to precision spectroscopic experiments"

Dmitry Solovyev, Saint-Petersburg State University

12.00-12.15

Finite temperature radiative corrections to the bound electron g -factor, hyperfine structure and atomic clock transitions

Timur Zalialutdinov, St. Petersburg State University, Petersburg Nuclear Physics Institute

12.15-12.30

"Quadratic Zeeman effect in boronlike ions"

Valentin Agababaev, Saint Petersburg Electrotechnical University "LETI", ITMO University

12.30-12.45

"One-electron matter-antimatter quasimolecules within the finite-basis-set method for the two-center Dirac equation"

Aleksey Anikin, St. Petersburg State University

12.45-14.15

Lunch time ☕

Chairman: Alexey Yulin, ITMO University

14.15-15.15

Plenary talk

"Elementary excitations in exciton-polariton systems"

Nina Voronova, National Research Nuclear University MEPh, Russian Quantum Center

15.15-15.40

Expanded Talk

"Non-adiabatic polariton condensation in annular optical traps"

Anton Nalitov, Abrikosov Center for Theoretical Physics

15.40-16.00

Coffee Break ☕

Session I

Chairman: Dmitry Zezyulin

16.00-16.25

Invited talk

"Two-particle chiral bound state in the Bose-Hubbard model"

Andrei Stepanenko, London Institute for Mathematical Sciences

16.25-16.40

"Subradiant two-photon states in planar atomic lattices"

Ilya Volkov, ITMO University

16.40-16.55

«Elastic scattering of Laguerre - Gaussian vortex electron wave packets on hydrogen atoms»

Nadezhda Sheremet, ITMO University

16.55-17.10

"Angular momentum transfer in the interaction of intense circularly polarized laser pulses with dense structured targets"

Egor Peganov, National Research Nuclear University MEPhI

Friday

21 June



Chairman: Dmitry Glazov, ITMO University

10.00-11.00

Plenary talk

"Search for new physics and variations of the fundamental constants"

Mikhail Kozlov, Petersburg Nuclear Physics Institute named by B.P. Konstantinov of National Research Centre «Kurchatov Institute»

11.00-11.20

Coffee break ☕

Session J

Chairman: Dmitry Glazov, ITMO University

11.20-11.35

"Transit-time effects toward the search for the T, P-odd interactions"

Dmitry Chubukov, ITMO University

11.35-11.50

"Effect of electron correlations on double ionization of atoms in intense laser fields"

Denis Tyurin, National Research Nuclear University MEPhI

11.50-13.50

Lunch time ☕

Session K

Chair: Valery Uzdin, ITMO University

13.50-14.15

Expanded Talk

"Nuclear magnetization distribution effect in molecules and atoms"

Leonid Skripnikov, Petersburg Nuclear Physics Institute named by B.P. Konstantinov of National Research Centre «Kurchatov Institute»

14.15-14.30

"Investigation of two-photon electron capture by H-like ions"

Konstantin Lyashchenko, Petersburg Nuclear Physics Institute named by B.P. Konstantinov of National Research Centre «Kurchatov Institute»

14.30-14.45

"Vavilov-Cherenkov radiation and equivalent photon emission with vortex electrons"

Alisa Chaikovskaia, ITMO University

14.45-15.00

"Toroflux: A counterpart of the Chandrasekhar-Kendall state in noncentrosymmetric superconductors"

Anatolii Korneev, Pacific Quantum Center, Far Eastern Federal University

15.00-15.15

"Acustomechanics of particles near an elastic substrate"

Vsevolod Kleshchenko, ITMO University

15:15-15:30

Closing Ceremony

List of posters



1. "The model description of the transit time problem for the fast particles crossing the laser beam"
Sergei Chekhovskoi, Saint Petersburg State University
2. "Thermal induced energy shifts and level widths within the framework of the QED approach"
Josue Lopez Rodriguez, St. Petersburg State University
3. "Two-photon recombination in the presence of cascade processes"
Platon Kvasov, St. Petersburg State University
4. "Superluminal Cherenkov effect in Compton backscattering"
Dmitrii Gavrilenko, National Research Nuclear University MEPhI
5. "Theoretical calculations of the hyperfine splitting of the $^2P_{1/2}$ and $^2P_{3/2}$ levels in boron-like Cl^{12+} "
Dmitrii Zinenko, St. Petersburg State University
6. "g factor of highly charged ions in ground and excited states: αZ expansion for correlation corrections:
Artyom Moshkin, Saint-Petersburg State University, ITMO University
7. "Influence of annealing of oxygen vacancies on the defect structure of bulk gallium oxide crystals."
Dmitrii Kalganov, ITMO Iniversity
8. "Synchronization transition in system of superconducting grains on weighted undirected graph"
Artem Alexandrov, Institute for Information Transmission Problems of RAS
9. "Smith-Purcell radiation from a 1D flat fractal photonic crystal"
Pavel Shapovalov, National Research Nuclear University MEPhI
10. "Quantum electrodynamical density functional theory for generalized Dicke model"
Denis Novokreschenov, ITMO University
11. "Zero-Bias Photodetection in 2D Materials via Geometric Design of Contacts"
Aleksandr Shabanov, Moscow Institute of Physics and Technology
12. "Magnetic Soft Matter based on polyurethanes filled with microparticles toward Programmable and Multifunctional Miniature Machines"
Dmitry Konovalov, ITMO University
13. "Plasma Grating Electron Density Evolution in Liquid Water"
Shireen Hilal, ITMO University
14. "Analytical model of THz generation in p-i-n diode $Al_xGa_{1-x}As/GaAs$ "
Xiangyi Fan, ITMO University
15. "Adiabatic potential curves of H - p and He⁺ - p ions: relativistic treatment"
Alexander Danilov, St. Petersburg State University
16. "Exceptional point in the system of two coupled acoustic resonators"
Mark Miroliubov, ITMO University
17. "The effect of axion exchange on the energy of lithium-like ions"
Rinat Abdullin, ITMO University
18. "Gauge invariance of the QED corrections containing self energy for electrons in bound state"
Egor Lazarev, St. Petersburg State University, ITMO University
19. "Gaussian basis set for vacuum polarization calculation"
Vladislav Ivanov, ITMO University
20. "A huge hysteresis in a metal-semiconductor-metal 2 structure with a potential application as a memristor"
Abolfazl Mahmoodpoor, ITMO University
21. "Anti-PT Symmetry and Exceptional Points in Waveguides with Chiral Media"
Jim Enriquez, ITMO University