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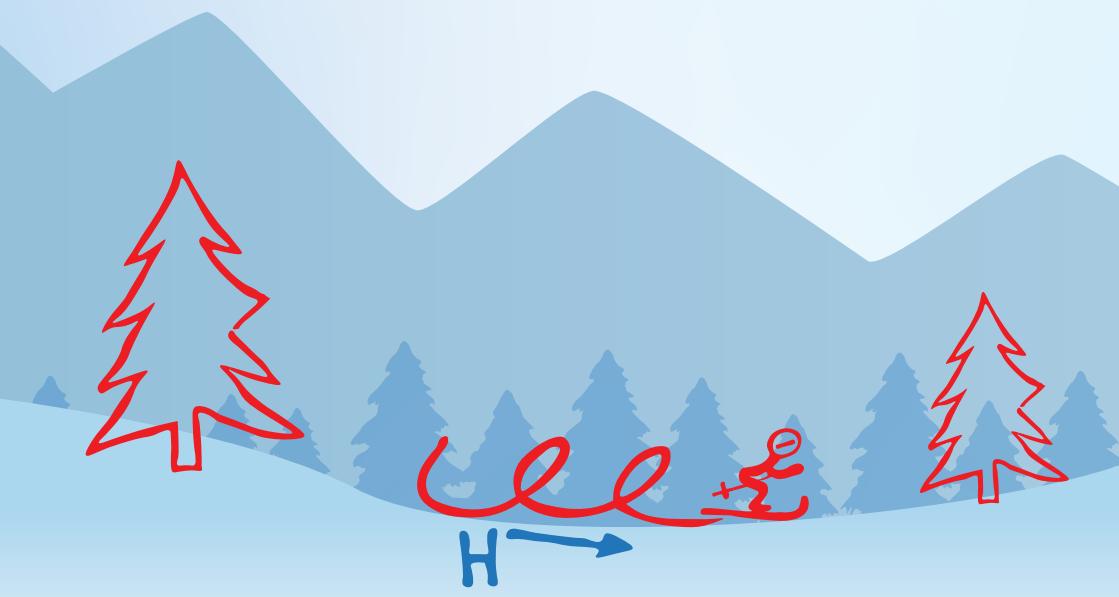
UB RAS

XLI INTERNATIONAL WINTER SCHOOL
IN THEORETICAL PHYSICS

Kowarka-XLI

FEBRUARY 1–6, 2026

PROGRAM



FEBRUARY 1 (SUNDAY)

18:00	CHECK IN
19:00 – 20:00	DINNER
20:00 – 22:00	GETTING TOGETHER HALL 2

FEBRUARY 2 (MONDAY)

08:00 – 08:30	BREAKFAST
08:30 – 08:45	SCHOOL OPENING HALL 1
08:45 – 09:45	Georgy Shlyapnikov Novel phase transitions and quantum advantage in disordered quantum systems
09:45 – 10:15	Vadim Brazhkin Main Triple Point of Substances on the Phase Diagram: The Secret Becomes Clear
10:15 – 13:30	FREE TIME
13:30 – 14:30	LUNCH
14:30 – 15:30	Sergei Ovchinnikov Single particle and two particle excitations in the two-dimensional Hubbard model on square and triangular lattices
15:30 – 15:50	Ivan Goremykin The Effect of Strong Magnetic Fluctuations in the Single-Band Hubbard Model Near Half Filling
15:50 – 16:10	Ilia Dedov Non-Fermi-liquid behavior and Fermi-surface expansion induced by van Hove–driven ferromagnetic fluctuations: the D-TRILEX analysis
16:10 – 16:30	Kaushal Kesharpu Quantum Selection of ground states in low dimensional magnets
16:30 – 17:00	COFFEE BREAK

17:00 – 18:00	Vladimir Mineev ONLINE Altermagnetic and Noncentrosymmetric ordering in metals. Part 1
18:00 – 18:20	Andrey Elistratov Entangling Two Polariton Bose–Einstein Condensates: Challenges and Insights
18:20 – 18:40	Mikhail Vasin Critical Dynamics of Spin Boson Model
18:40 – 19:00	Sergey Remizov Quantum properties of nonequilibrium kinetics of TWPA
19:00 – 20:00	DINNER
19:30 – 21:00	POSTER SESSION 1 HALL 2
01	Razmik Babayan Exactly solvable model of electron-phonon interaction with forward-focuced scattering
02	Rail Khashayev Tensor networks in condensed matter physics: from DMRG to Feynman Diagrams
03	Ivan Trifonov Coulomb Correlations and the Coherent–Incoherent Electronic Crossover in Vanadium Oxychalcogenides
04	Vitalii Chukov Sub-Bragg and small angle scattering of the Rayleigh wave as a topological intersection of meta-Rayleigh spectroscopy and the Laue-Bragg-Wulff meta-spectroscopy
05	Vsevolod Yashin On classical rewriting of CSS-preserving stabilizer circuits
06	Ludmila Gonchar Competition of superexchange interactions in charge-ordered insulating manganites
07	Alena Semiannikova Electronic and magnetic properties of $\text{Co}_{2-x}\text{Mn}_{1+x}\text{Al}$ ($x = 0; 0.25; 0.5; 0.75; 1$) Heusler alloys: from topological semimetal Co_2MnAl to spin gapless semiconductor Mn_2CoAl

08 **Fedor Temnikov**
Rattling effect in quadruple perovskites and its possible pseudo Jahn-Teller origin

09 **Danil Myakotnikov**
Flat bands in “pyrocubic” lattice

10 **Evgenii Chernov**
Topological transition in Co_2MnAl during substitution of cobalt for copper

11 **Alexey Mashirov**
Heat capacity and magnetic phase transitions of Mn_5Si_3 compound

12 **Danila Babukhin**
Quantum error mitigation with combined data

13 **Vladimir Orlov**
From Discrete to Continuous Variables Systems via Jordan–Schwinger Tomographic Transformation

14 **Niazbeck Useinov**
Spin-orbit effects induced by current in magnetic tunnel junctions

15 **Vladislav Okatyev**
A spin model test for a generative quantum eigensolver

16 **Bogdan Fominykh**
Observation of the Kondo effect in magnetically-doped tungsten ditelluride single crystal

17 **Ioann Matveev**
Semiconductor-metal transition of gold nanotubes

18 **Mikhail Petrik**
Impact of Vibrational Entropy on Ordering and Phase Stability in $\alpha\text{-Ti-Al}$

19 **Alina Mardanova**
Studying quantum phase transitions with quantum kernel methods

20 **Yury Panov**
Exact solution of one-dimensional spin models with Markov property

21 **Anastasia Lebedeva**
Crystal structure, electronic and magnetic properties of Sr_2NbO_4

22 **Polina Makarova**
Electronic structure, magnetic state and orbital-selective physics in the nickelate superconductor $\text{La}_3\text{Ni}_2\text{O}_7$ at ambient pressure

23 **Daria Ponkratova**
Ferroelectric and antiferroelectric instabilities in Bi monolayer

24 **Ekaterina Khazieva**
Beyond PBE: High-fidelity machine learning potentials for Ti-Al alloys via foundation Model-based transfer learning

25 **Polina Kovaleva**
Extended Hubbard model on the kagome lattice

26 **Timofey Maksimov**
Spectral Features of Exciton Polaritons in Crossed Magnetic and Electric Fields

27 **Daniil Yumakov**
Electronic structure and optical absorption spectra of Au_{72} gold fullerene

28 **Ivan Dudinets**
All-to-all connectivity of Rydberg-atom-based quantum processors with messenger qubits

21:00 – 22:30

QUIZ [HALL 1](#)

FEBRUARY 3 (TUESDAY)

08:00 – 08:45	BREAKFAST
08:45 – 10:15	Alexey Rubtsov Local and nonlocal in planar Hubbard systems
10:15 – 13:30	FREE TIME
13:30 – 14:30	LUNCH
14:30 – 15:30	Ivan Leonov Nickelates: a new class of high-temperature superconductors
15:30 – 15:50	Sergey Skornyakov
	Evaluation the tendencies to superconducting pairing of epsilon-iron and iron-based superconductors from DFT+DMFT calculations
15:50 – 16:10	Viktor Koledov Magnetic flux vortices in moving high-temperature superconductors for magnetic levitation
16:10 – 16:30	Alexey Putilov Vortex structure and intervortex interaction in superconducting structures with intrinsic diode effect
16:30 – 17:00	COFFEE BREAK
17:00 – 18:00	Alexander Melnikov Interplay of superconductivity and ferroelectricity: tuning superconductivity by the electric field
18:00 – 18:20	Yury Proshin Solitary superconductivity in ferromagnet-superconductor trilayers (new aspects)
18:20 – 18:40	Anastasia Maksimovskaya Programmable soliton dynamics in All-Josephson-junction logic cells and networks
18:40 – 19:00	Daniil Konyshев Neural network approximation of classical correlations in quantum systems

19:00 – 20:00	DINNER
20:00 – 20:30	Dajun Feng Heilongjiang Academy of Sciences
20:30 – 22:00	GUITAR EVENING HALL 1

FEBRUARY 4 (WEDNESDAY)

08:00 – 08:45	BREAKFAST
08:45 – 10:15	Vikram Tripathi Quantum spin liquids and topological order
10:15 – 10:40	COFFEE BREAK
10:40 – 11:00	Andrey Mikheenkov
	Low dimensional magnetism. Spherically symmetric approaches
11:00 – 11:20	Viktor Yushankhai Non-equilibrium dynamics in low-dimensional models of quantum magnetism
11:20 – 11:40	Leonid Taran Spin Jahn-Teller effect in CoTi_2O_5
11:40 – 12:00	COFFEE BREAK
12:00 – 12:45	Vladimir Mineev ONLINE Altermagnetic and Noncentrosymmetric ordering in metals. Part 2
13:30 – 14:30	LUNCH
14:30 – 15:30	Vladimir Zyuzin Magnon spin currents in antiferromagnets
15:30 – 15:50	Yulia Baramygina
	Magnon thermal Hall effect in skyrmion crystal
15:50 – 19:30	FREE TIME
19:30 – 22:30	BANQUET HALL 1

FEBRUARY 5 (THURSDAY)

08:00 – 08:45	BREAKFAST
08:45 – 09:45	Alexander Chernov Twist-controled properties of 2D materials
9:45 – 10:15	Alexander Ovchinnikov Chiral phonons and micropolar theory of elasticity
10:15 – 13:30	FREE TIME
13:30 – 14:30	LUNCH
14:30 – 15:30	Vladimir Mantsevich Different regimes of exciton transport in two-dimensional semiconductors
15:30 – 15:50	Mikhail Malakhov Nonlinear exciton dynamics in 2D semiconductors modeled for pump-probe experiments
15:50 – 16:10	Andrey Nikishin Violation of the Luttinger's theorem in fractional Chern insulators
16:10 – 16:30	Semyon Baidak The influence of electronic correlations on the Fermi surfaces and electronic structure of topological semimetal WTe ₂
16:30 – 17:00	COFFEE BREAK
17:00 – 17:30	Vladimir Stegailov First-principles modelling of exciton dynamics
17:30 – 17:50	Nikita Fominykh Polaron transport and trimeron ordering in the high-temperature phase of magnetite
17:50 – 18:10	Ludmila Syurakshina Cluster quantum-chemical approach to the study local electronic properties and exchange spin interactions in complex transition metal oxides
18:10 – 18:40	Ramil Niyazov A non-magnetic mechanism of backscattering in helical edge states

18:40 – 19:00	Viktor Timofeev Magnon edge states of skyrmion crystal in non-uniform magnetic field
19:00 – 20:00	DINNER
19:30 – 21:00	POSTER SESSION 2 HALL 2
29	Sergey Tarasov Boson sampling with self-generation of squeezing via interaction of photons and atoms
30	Gleb Ershov Scrambling horizon for a local quench: the emergent boundary beyond which information becomes delocalized
31	Alexander Poteryaev Strongly correlated electronic state in the ferrimagnetic quadruple perovskite $\text{CuCu}_3\text{Fe}_2\text{Re}_2\text{O}_{12}$
32	Daniil Konyshov Neural network approximation of classical correlations in quantum systems
33	Ivan Dudinets Circuit-QED simulator of the Bose-Hubbard model for quantum spin dynamics
34	Andrey Plyashechnik Non-equilibrium quantum dynamics in inhomogeneous Josephson traveling-wave parametric amplifiers
35	Dmitry Korlyakov Channel spectrum benchmarking of the Toffoli gate
36	Darya Yasinskaya Predicting Hamiltonian Parameters from Phase Diagrams Using Machine Learning
37	Artem Flegontov Symmetry-induced enhancement of transmission through a disordered system
38	Oleg Zuev Superconducting photocurrents induced by structured electromagnetic radiation
39	Alexander Kopasov Formation of inhomogeneous magnetic states triggered by electromagnetic proximity effect in planar superconductor/ferromagnet hybrids

40 **Anton Syurakshin**
Exploring magnetic properties of single molecular magnets:
general ab initio quantum-chemical approach and its applications

41 **Nikita Fominykh**
Polaron transport and trimeron ordering in the high-temperature
phase of magnetite

42 **Maria Kovalenko**
Inverse Faraday effect in mesoscopic superconducting disks
and films with columnar defects

43 **Alina Tsvetkova**
Edge states of periodically deformed topological insulator
and their forbidden zones oscillating under magnetic field

44 **Vasily Ulitko**
Neural network for predicting parameters of a model cuprate
superconductor

45 **Sergey Prosnjak**
Theoretical interpretation of experiments on magnetic moments
determination

46 **Anna Elistratova**
Modeling the dynamics of circuit elements for neural network
computing based on overdamped Josephson junctions

47 **Grigory Dedov**
Collective modes in correlated π -conjugated systems

48 **Leonid Silakov**
Analysis of Fluctuation Statistics via the Fluctuating Local Field
Method

49 **Anastasia Mikheeva**
Analysis of the excitation spectrum in magnetic skyrmion
structures

50 **Ruslan Kiznibaev**
Role of charge imbalance potential relaxation in high-frequency
dynamics of Abrikosov vortices in superconductors

51 **Alexander Dudarev**
Polaronic effects in the exchange interaction of correlated
systems: the role of competition between Holstein and Peierls
contributions

52 **Kaushal Kesharpu**
Density wave phase diagram of Creutz Lattice:
Effect of Correlation and Spin-Orbit Coupling

53	Semyon Onuchin Theoretical approach for treating quantum fluctuations of the order parameter in correlated fermionic systems
54	Murod Bahovadinov Anderson transition of a quantum particle with long-range hopping amplitudes in one dimension
55	Emil Mingazhetdinov Controlling properties of non-Gaussian light states via measurements on a squeezed ancillary mode
56	Alexander Melkozerov Creation of large-scale photonic weighted graph states with linear-optical fusion operations
57	Yana Lyakhova Fluctuation-driven spin and charge order in geometrically frustrated electron systems

21:00 – 22:30 **MUSBINGO**

FEBRUARY 6 (FRIDAY)

08:00 – 08:45	BREAKFAST
08:45 – 09:45	Vladimir Pudalov <small>HALL 2</small> Ferromagnetism in antiferromagnetic quasi-2D crystals
09:45 – 10:15	Igor Nekrasov Peculiarities of the electronic structure of multilayer high-T _c pnictides
10:15 – 10:30	SCHOOL CLOSING
13:00 – 15:00	LUNCH
14:00 – 15:00	CHECK OUT



SKI RESORT "SUNNY VALLEY"



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