

Bogolyubov Kyiv Conference "Problems of Theoretical and Mathematical Physics"

Tuesday 22 September 2026 - Thursday 24 September 2026

Bogolyubov Institute for Theoretical Physics

Scientific Programme

Tuesday, September 22

09-00 Registration

10-00 Conference opening

President of the NAS of Ukraine Anatoly Zagorodny

Director of the BITP Sergiy Perepelytsya

Morning Session

10-40 Ceremony of awarding of the Diploma of Doctor of Honoris Causa, Inauguration lecture

Sergii Fomin

"Nuclear deflagration phenomenon and prospective concept of safe fast breeder reactor"

Akhiezer Institute for Theoretical Physics NSC KIPT, Kharkiv

11-20 *Erik Aurell*

"Quasi-Linkage Equilibrium in spatially separated populations and in diploid genetics"

KTH-Royal Institute of Technology, AlbaNova University Center, Stockholm, Sweden

11-50 *Maxym Dudka, Dmytro Shapoval, Yuriy Holovatch*

"Criticality of structurally-disordered spin systems with weak long-range interactions"

Yukhnovskii Institute for Condensed Matter Physics, Lviv

12-10 COFFEE BREAK

12-30 *Larissa Brizhik*

"Stabilizing role of the dissipation effects in the dynamics of electrosolitons in magnetic field"

Bogolyubov Institute for Theoretical Physics

13-00 *Myroslav Holovko*

"Associative approach in soft matter theory"

Yukhnovskii Institute for Condensed Matter Physics, Lviv

13-30 LUNCH

Afternoon Session

14-30 *Jorge Kurchan*

"Liquid theory of spherical and unitary designs"

École Normale Supérieure de Paris, France

15-00 *Yuriy Holovatch, Taras Holovatch, Yuri Kozitsky, Krzysztof Pilorz*

"Staggering domino-like blast front motion in a one-dimensional cold gas"

Yukhnovskii Institute for Condensed Matter Physics, Lviv

15-20 *Khrystyna Gnatenko*

"Entanglement in parameterized quantum circuits and its quantification on quantum computers"
Ivan Franko National University of Lviv

15-40 *Poster Session with COFFEE*

17-40 *CONFERENCE DINNER*

Wednesday, September 23

Morning Session

10-00 *Mark Gorenstein*

"Baryon fluctuation signatures of the onset of deconfinement"
Bogolyubov Institute for Theoretical Physics

10-30 *Musfer Adzhymambetov*

"Equation of State of Strongly Interacting Matter from Physics-Informed Neural Networks"
Bogolyubov Institute for Theoretical Physics

10-50 *Sergiy Akkelin*

"Particle multiplicity fluctuations of quantum origin and high-multiplicity pp collision events"
Bogolyubov Institute for Theoretical Physics

11-10 *Alexander Magner*

"Macroscopic rotational constraints on the neutron-star radius"
Institute for Nuclear Research, Kyiv

11-30 *COFFEE BREAK*

12-00 *Ubirajara van Kolck*

"Strong interactions from scattering to matter: ^4He atoms and nucleons"
European Center for Theoretical Studies in Nuclear Physics and Related Areas, Trento, Italy

12-30 *Viktor Vasilevsky, Sabina Amangeldinova, Nursultan Kalzhigitov*

"The quest for the Hoyle-analog states in light hypernuclei"
Bogolyubov Institute for Theoretical Physics

12-50 *Volodymyr Shapoval, Pritam Chakraborty, Georgy Kornakov, Adam Kisiel, Yurii Sinyukov*

"Non-identical particle femtoscopy as a probe of the heavy-ion collision dynamics"
Bogolyubov Institute for Theoretical Physics

13-10 *Ari Paavo Seitsonen, Michele Lazzeri*

"The mobility of a mono-vacancy in 2D graphene studied with molecular dynamics"

École Normale Supérieure, Paris, France

13-30 LUNCH

Afternoon Session

14-30 *Yuriy Slyusarenko*

"M.M. Bogolyubov and theoretical physics in Kharkiv"

O.I. Akhiezer Institute for Theoretical Physics, NSC KIPT

V.N. Karazin Kharkiv National University

15-00 *Carlo Baccigalupi*

"Cosmology Probes for Fundamental Physics"

International School for Advanced Studies, Trieste, Italy

15-30 *Oleksandr Khasai, Oleg Ruchayskyi, Denys Malyshev,*

Lidiia Zadorozhna

"Ensemble-Averaged Axion–Photon Conversion in Turbulent Galaxy Clusters"

Bogolyubov Institute for Theoretical Physics

15-50 *Vsevolod Skorobohatov, Sergii Trofymenko*

"Coherent effects in atomic K-shell ionization and characteristic X-ray emission by ultrashort high-energy electron bunches"

National Science Center Kharkiv Institute of Physics and Technology

16-10 COFFEE BREAK

16-40 *Hartmut Abele, Stepan Moskaliuk*

"Seeing Effective Field Theory of Neutron Decay through of Double Categories"

Bogolyubov Institute for Theoretical Physics

17-00 *Leonid Christophorov*

"Resetting search for multiple targets"

Bogolyubov Institute for Theoretical Physics

17-20 *Serhii Tunyk, Elmar Petrov*

"Magnons as uncharged carriers for quantum communication between nanomagnets"

Bogolyubov Institute for Theoretical Physics

17-40 *Oleg Gerasymov*

"Physical modeling of macroscopic properties of the complex many-particle, poly-dispersive micromechanical (granular) systems"
Odessa National University

18-00 *Vasyl Maslov, Ilia Demydenko, Danylo Maslo, Sergej Melnik*
"Modern Trends in Plasma Wakefield Acceleration" Max Planck Institute of Microstructure Physics,
Halle (Saale), Germany

18-20 EXCURSION TO FEOFANIA PARK

Thursday, September 24

Morning Session

10-00 *Johannes Bluemlein, Alexandre Gavrilik, Ostap Mykhailiv, Carsten Schneider*
"q and mu extensions of special function in quantum field theory"
Deutsches Elektronen-Synchrotron (DESY), Germany

10-30 *Viktor Gerasimenko*
"Propagation of correlations in quantum systems of many particles and kinetic equations"
Institute of Mathematics

10-50 *Alexandre Gavrilik, Andrii Nazarenko, Yuliia Lunha*
"The uses of the $SO(5)/SO(2)$ Stiefel sigma model for the unified Zhang's model"
Bogolyubov Institute for Theoretical Physics

11-10 *Oleksandr Vidybida*
"The exact expression for increasing selectivity through statistical fluctuations in a system with a threshold"
Bogolyubov Institute for Theoretical Physics

11-30 COFFEE BREAK

12-00 *Nikolai Iorgov, Kohei Iwaki, Oleg Lisovsky, Yurii Zhuravlov*
"Irregular conformal field theory and Painlevé equations"
Bogolyubov Institute for Theoretical Physics

12-20 *Yurii Zhuravlov, Nikolai Iorgov*
"Long-time asymptotic series for the Painlevé II equation: Riemann Hilbert approach"
Bogolyubov Institute for Theoretical Physics

12-40 *Oleksiy Vakhnenko*
"Canonization-based symmetry breaking in an integrable four-component nonlinear dynamical system on a quasi-one-dimensional lattice with background-controlled intersite coupling"

Bogolyubov Institute for Theoretical Physics

13-00 LUNCH

14-00 *Alexander Zolotaryuk*

"Resonant tunneling through one-point singular potentials"

Bogolyubov Institute for Theoretical Physics

14-20 *Roman Ovsiannikov, Andrii Sotnikov, Kurt Jacobs, Denys Bondar*

"Low-Rank Split-Operator Propagation for Structured Open Quantum Systems"

NSC «Kharkiv Institute of Physics and Technology»

14-40 *Yan Rybalko*

"Generic regularity of the two-component Novikov equation"

University of Oslo, Norway

B.Verkin Institute for Low Temperature Physics and Engineering

15-00 COFFEE BREAK

15-30 *Anna Morozovska, Eugene Eliseev, Akash Saha, Venkatraman Gopalan*

"Manifestation of bilinear flexo-antiferrodistortive coupling at twins and antiphase boundaries in ferroelastics"

Institute of Physics

16-00 *Sergei Sharapov*

"Competing orders in rhombohedral N-layer graphene"

Bogolyubov Institute for Theoretical Physics

16-20 *Alexander Eremko, Larissa Brizhik, Vadym Loktev*

"Spectrum of electron states in a charged atomic chain within the Dirac description"

Bogolyubov Institute for Theoretical Physics

16-40 *Maksim Tomchenko*

"Is the superfluidity of a Bose gas related to the spontaneous breaking of $U(1)$ symmetry?"

Bogolyubov Institute for Theoretical Physics

17-00 *Yuliia Gusieva, Volodymyr Kravchuk, Kostiantyn Yershov*

"Field-controlled thermal spin transport in rutile-type altermagnets"

G.V. Kurdyumov Institute for Metal Physics

17-20 *Dmytro Kadygrob*

"Quantum-Mechanical Analysis of Electron Transport in a Cylindrical Crossed-Field Configuration with a Periodic Boundary Potential"

O. Ya. Usikov Institute for Radio Physics and Electronics

17-40 Closing of the conference

HIGH ENERGY PHYSICS AND NUCLEAR MATTER

STATISTICAL PHYSICS AND SOFT MATTER

ASTROPHYSICS AND COSMOLOGY

CONDENSED MATTER PHYSICS

MATHEMATICAL PHYSICS

QUANTUM MATERIALS