September 15, Monday Plenary Session VBLHEP Conference Hall

Chairman: A. Malakhov

10.00-10.15 *Victor Matveev (JINR)* Opening

10:15-10:55 *Yuri Oganessian (JINR)* Heavy ions in science and technology

10:55-11:30 Group photo, coffee break

Chairman: A. Taranenko

11:30-12:00 *Victor Riabov (Russia/JINR)*Status and perspectives of the MPD at NICA 12:00-12:30 *Mikhail Zavertyaev (Russia)*Status of BM@N experiment

September 15, Monday Parallel Session I VBLHEP Conference Hall

Quantum chromodynamics at large distances

<u>Chairman: V. Dzhunushaliev</u>

14:00-14:30 Shubham Sharma (Russia)

Exploring Higher-Twist Hadron Structure in Light-Front QCD

14:30-14:50 Roman Zhokhov (Russia)

Phase diagram of QCD and two color QCD: dualities and inhomogeneous phases

14:50-15:20 Artem Roenko (JINR)

Chiral and deconfinement crossovers at finite quark spin density from lattice QCD

15:20-15:40 Andrey Radzhabov (Russia)

The light-by-light contribution to the anomalous magnetic moment of muon within the nonlocal chiral quark model with vector and axial-vector meson

15:40-16:00 Coffee break

Chairman: A. Radzhabov

16:00-16:20 Jayanta Dey (JINR)

Gluodynamics in accelerated frames using lattice simulation

16:20-16:40 *Ilya Kudrov (Russia)*

Studying properties of the SU(2) QCD by lattice field theory methods

16:40-17:00 **Daria Volkova (JINR)**

New analysis of the Bjorken sum rule based on the analytic perturbation theory

17:00-17:20 Kirill Shilyaev (Russia)

Contribution of linearly polarized gluons in charmonium production within the Soft Gluon Resummation approach

17:20-17:40 Vladimir Dzhunushaliev (Kazakhstan)

Color field configuration between three static quarks

17:40-18:10 Alexander Osipov (JINR)

Light quark masses

18-20 Welcome party (VBLHEP canteen)

September 15, Monday Parallel Session II Auditorium 347 (3rd floor)

Relativistic heavy ion collisions

Chairman: M. Mamaev

14:00-14:20 Alexander Borissov (JINR)

Collective behavior of hyperons in Pb-Pb collisions with ALICE

14:20-14:40 Pavel Gordeev (Russia)

Production of Sigma^{+-} baryons in p-Pb and pp collisions at the LHC with ALICE

14:40-15:00 Sergey Gevorgyan (JINR)

Vector mesons photoproduction in ultra-peripheral ion-ion collisions

15:00-15:20 Ekaterina Tsapulina (JINR)

MPD-ITS Current status

15:20-15:40 Evgeny Andronov (Russia)

Two-particle rapidity correlations in strongly intensive quantities within string model

15:40-16:00 Coffee break

Chairman: V. Riabov

16:00-16:20 Mikhail Mamaev (Russia/JINR)

Directed flow of protons in Xe+CsI collisions at the beam energy of 3.8A GeV with BM@N

16:20-16:40 Ibrahim Abdulmagead (Egypt /JINR)

Impact of in-medium on proton scattering amplitude at incident energies 12.7-1000~MeV

16:40-17:00 Mahmoud Nasar (Egypt)

Pion Spectra and Entropy per Rapidity in Au—Au Collisions at NICA Energies Using HRG with Resonance Decays and Tsallis Distribution

17:00-17:30 **Oleg Golosov (Russia)**

Performance for inclusive photon and neutral pion spectra and anisotropic flow measurements with the MPD experiment

17:30-17:50 Sergey Kiselev (Russia)

Hadronic resonance production with ALICE at the LHC

17:50-18:10 Peter Parfenov (Russia/JINR)

Anisotropic flow in asymmetric Xe+W collisions at MPD-FXT

18-20 Welcome party (VBLHEP canteen)

Baldin ISHEPP XXVI, September 15-20, 2025

Scientific Programme

September 16, Tuesday Plenary Session VBLHEP Conference Hall

Chairman: V. Braguta

09:00-09:30 Boris Kosyakov (Russia)

The atomic nucleus as a bound system of 3A quarks

09:30-10:00 Vladimir Karmanov (Russia)

Relativistic light-front wave function of He-3

10:00-10:20 Jovan Milosevic (Serbia)

Azimuthal anisotropies from jets in pp, heavy ion collisions up to ultra cold gases

10:20-10:40 Yubing Dong (China)

Study of D_{03} and D_{30} dibaryons in a SU(3) chiral constituent quark model

10:40-11:00 Coffee break

Chairman: V. Karmanov

11:00-11:40 Arkadiy Taranenko (Russia/JINR)

25 years of heavy-ion physics at the RHIC

11:40-12:20 *Victor Braguta (JINR)*

Spatially inhomogeneous confinement/deconfinement phase transition in rotating gluodynamics and QCD

September 16, Tuesday Parallel Session I VBLHEP Conference Hall

Progress in experimental studies in high energy centers. Relativistic heavy ion collisions

Chairman: G. Feofilov

14:00-14:30 **Sergey Shulga (JINR)**

Measuring distributions of quark and gluon jets by jet parameters at a hadron collider

14:30-15:00 Valentin Ustinov (JINR)

The Liquid Scintillator Track Detector

15:00-15:30 Vladimir Zherebchevsky (Russia)

Modern silicon and scintillation detector systems for the experiments at the NICA collider

15:40-16:00 Coffee break

Chairman: V. Zherebchevsky

16:00-16:20 Faig Ahmadov (JINR)

Study of the Higgs boson using various machine learning algorithms

16:20-16:40 Marina Pokidova (Russia)

Latest results of searches for invisible Higgs Boson decays in the ATLAS experiment

16:40-17:00 Oleg Rogachevsky (JINR)

Two particles correlations in HIC

17:00-17:20 Grigory Feofilov (Russia)

High-order net-proton cumulants and the event volume definition in A+A collisions at NICA energies

17:20-17:40 Snezhana Komarova (Russia)

Neutral pion elliptic flow in p+Au collisions at 200 GeV

17:40-18:00 Ivan Volkov (JINR)

Simulation of Heavy-Ion Collisions for the SPD BBC Phase 0 Detector

18-20 Bus to the hotel

September 16, Tuesday Parallel Session II Auditorium 347 (3rd floor)

Polarization phenomena, spin physics

Chairman: V. Troshin

14:00-14:30 Sergey Goloskokov (JINR)

Exclusive J/Psi production and gluon GPDs effects

14:30-14:50 Renat Sadykov (JINR)

New developments in the ReneSANCe event generator

14:50-15:10 *Egor Eremeev (JINR)*

On the equation of state of rotating gluon plasma

15:10-15:40 Alexander Silenko (JINR)

Relativistic quantum-mechanical description of acceleration of charged vortex particles by a uniform electric field

15:40-16:00 Coffee break

Chairman: S. Goloskokov

16:00-16:20 Dmitrii Sychev (Russia/JINR)

Lattice study of total momentum and free energy of rotating gluon plasma

16:20-16:50 Mridupawan Deka (JINR)

Neutrino spin oscillations in the vicinity of a black hole

16:50-17:10 Maxim Dvornikov (Russia/JINR)

Quantum field theory description of neutrino spin-flavor oscillations

17:10-17:30 **Daria Flusova (JINR)**

Global polarization of lambda hyperon in the MPD experiment at NICA energies

17:30-18:00 *Ivanhoe Pestov (JINR)*

Essence of charge and spin with general covariant Dirac equations

18-20 Bus to the hotel

September 16, Tuesday Parallel Session III NICA Hall (1st floor)

Applied use of relativistic beams. Cumulative and subthreshold processes

Chairman: E. Andronov

14:00-14:20 Rumen Gushterski (JINR)

Importance of the neutron moderators for neutron induced relations placed in massive spallation target and nuclear fuel in ADS

14:20-14:40 Otgongerel Baatar (Mongolia)

Analysis of α_S (q^2) of π - mesons and protons from π - C interactions at 40 GeV/c and pp interactions at 205 GeV/c

14:40-15:00 Khishigbuyan Narankhuu (Mongolia/JINR)

Study of the running coupling constant of π - mesons and protons from p+p and p+C interactions at 10 GeV/c

15:00-15:20 Urangua Murdorj (Mongolia/JINR)

Study of the running coupling constant of π - mesons and protons from p+p and p+C interactions at 4.2 GeV/c

15:40-16:00 Coffee break

September 18, Thursday Parallel Session I VBLHEP Conference Hall

Hadron spectroscopy, multiquarks

Chairman: Kh. Abraamyan

09:00-09:30 *Ganbold Gurjav (JINR)*

Isospin symmetry violation in the strong decays of the spin-2 exotic state X_2(4014)

09:30-09:50 Igor Obukhovsky (Russia)

Non-nucleonic degrees of freedom in terms of the quark cluster approach

09:50-10:10 Ivan Obraztsov (Russia)

Charge asymmetry in the process $e^+e^- \rightarrow \pi^+\pi^-\pi^0\gamma$

10:10-10:40 Yury Uzikov (JINR)

Search for dibaryon resonances in the reactions $dd \rightarrow dd$ pi pi and $pd \rightarrow pd$ pi pi

Coffee break 10:40-11:00

Chairman: G. Gurjav

11:00-11:20 Vadzim Haurysh (Belarus)

Charmonium and bottomonium electromagnetic characteristics in relativistic quark model

11:20-11:40 Fedor Martynenko (Russia)

Heavy tetraquarks in the hyperspherical approach

11:40-12:00 **Prokhor Egorov (JINR)**

Searches for glueballs at BESIII

12:00-12:20 Khachik Abraamyan (JINR)

Neutral and charged decay modes of the X17 boson observed in dCu collisions at a momentum of 3.8 GeV/c per nucleon

September 18, Thursday Parallel Session I VBLHEP Conference Hall

Relativistic heavy ion collisions

Chairman: N. Bikmetov

14:00-14:20 *Vadim Dmitriev (Russia)*

Nonperturbative kinetic description of the vacuum QGP production in the Abelian projection methods

14:20-14:40 Anton Anufriev (Russia)

Holographic equation of state matched with hadron gas EoS as a tool for the study of the QGP evolution

14:40-15:00 Marimuthu Natarajan (JINR)

Exploring α-Particle Emission Induced by Relativistic Muons in Nuclear Emulsion

15:00-15:20 Svetlana Simak (Russia)

Predictions in modified Glauber model of total charged-particle yields in 16O +16O and 20Ne+20Ne collisions at LHC

15:20-15:40 Alexander Demanov (Russia/JINR)

Centrality determination in heavy-ion collisions at the NICA energy range

15:40-16:00 Coffee break

Chairman: V. Dmitriev

16:00-16:20 Petr Alekseev (Russia/JINR)

Baryon femtoscopy in 3.2 AGeV argon-nucleus interactions

16:20-16:40 *Roman Shindin (JINR)*

Search for anomalous leptons with masses in the range of 8-20 MeV at the Nuclotron

16:40-17:00 *Vadim Volkov (Russia)*

Measurements of Charged Fragments Spectators Yields in Xe+CsI reaction at $3.8\,AGeV$ at BM@N

17:00-17:20 Alexander D'yachenko (Russia)

Manifestation of anisotropic hydrodynamics based on the latest data on pion and kaon emission in heavy-ion collisions in the BM@N experiment

17:20-17:40 Artem Timofeev (JINR)

Strange hadron production in Au+Au collisions at $\sqrt{s_{NN}}$ =3-27 GeV with UrQMD

18:00 Bus to the hotel

19.00 Concert (Scientific Club)

September 18, Thursday Parallel Session II Auditorium 347 (3rd floor)

Cumulative and subthreshold processes

Chairman: A. Larionov

09:00-09:30 Mikhail Tokarev (JINR)

Cumulative processes and fractal structure of nuclei

09:30-09:50 Tatiana Dedovich (JINR)

Manifestation of nuclear effects in fractal analysis of Monte Carlo AMPT events using SePaC method

09:50-10:10 Semyon Yurchenko (Russia)

MC modelling of high transverse momentum particle production in pp and dd collisions at NICA energies

10:10-10:40 Vladimir Vechernin (Russia)

Formation of protons in a new cumulative region of central rapidities and large transverse momenta due to coherent coalescence of quarks

Coffee break 10:40-11:00

Chairman: M. Tokarev

11:00-11:20 Alexei Larionov (JINR)

A model of cumulative proton production in the process pd to ppn

11:20-11:50 Georgy Sharkov (Russia)

Development of experimental research program for multi-quark systems at high pT on Nuclotron

11:50-12:10 Alexey Stavinskiy (Russia/JINR)

Time-of-flight and coordinate criteria for two neutros identification with 3D neutron detector

12:10-12:30 **Dmitriy Sakulin (JINR)**

Topological identification criteria two-neutron events in 3d neutron detector

September 18, Thursday Parallel Session II Auditorium 347 (3rd floor)

Structure functions of hadrons and nuclei

Chairman: A. Kotikov

14:00-14:20 Andrej Arbuzov (JINR)

Electron structure functions

14:20-14:40 Sergey Yurev (JINR)

Relativistic generalization of the Faddeev-Yakubovsky equation

14:40-15:00 Alexey Zhevlakov (JINR)

T-odd and T-even hadronic structures of the Drell-Yan process. Small Q_T/Q expansion

15:00-15:20 Mikhail Slautin (Russia/JINR)

Space-like pion off-shell form factors in the Bethe-Salpeter approach

15:20-15:40 Olga Solovtsova (Belarus/JINR)

The 12-th order QED corrections to lepton anomalies due to vacuum polarization insertions within the Mellin-Barnes representation

15:40-16:00 Coffee break

Chairman: A. Arbuzov

16:00-16:20 **Dorota Kotlorz (JINR)**

Charge sum rules for quark fragmentation functions as a new manifestation of superconformal symmetry between mesons and baryons

16:20-16:50 Minh Truong Vo (Vietnam/JINR)

Multipole Expansion for Electron-Nucleus Scattering at High Energies: An Overview

16:50-17:20 Anatoly Kotikov (JINR)

Simple models of PDFs and nPDFs

17:20-17:40 Yuri Obukhov (Russia)

Ideal relativistic spin fluid model

18:00 Bus to the hotel 19.00 Concert (Scientific Club)

September 18, Thursday Parallel Session III NICA Hall (1st floor)

Projects NICA/MPD/SPD/BM@N at JINR

Chairman: P. Parfenov

09:00-09:20 **Sofiya Sokolova (JINR)**

DCS for TPC MPD: Integrating DIM and MasterScada 4D

09:20-09:40 Alexander Bychkov (JINR)

TPC geomeries for NICA MPD simulations

09:40-10:00 Nikolay Karpushkin (Russia/JINR)

Study of the Response of the Forward Hadron Calorimeter and Forward Quartz Cherenkov Hodoscope in Xe+CsI Reactions at 3.8 AGeV at the BM@N

10:00-10:20 **Dim Idrisov (Russia)**

Comparison of methods for determining centrality in nucleus-nucleus collisions in the BM@N experiment

10:20-10:40 Yonghong Wang (China/JINR)

Simulation Study of Dileptons at $\sqrt{s_{NN}}$ = 9.2 GeV Bi-Bi Collisions at NICA-MPD

Coffee break 10:40-11:00

Chairman: D. Flusova

11:00-11:20 Dilyana Suvarieva (JINR)

A Monte Carlo simulation of the MPD experiment performance for strange particle decay study

11:20-11:40 Boris Kostenko (JINR)

Why is it interesting to study proton-deuteron collisions at $\sqrt{s} \approx 8.9 - 9.7$ GeV and - t = 0.6 - 1.8 GeV2

11:40-12:00 Nikodim Makarov (Russia)

Method for increasing the efficiency of registration of minimum ionizing particles by fast detector on microchannel plates

12:00-12:20 Maxim Martemianov (Russia)

Cosmic-rays generators test using ECal/MPD experimental data

12:20-12:40 Irina Zhavoronkova (JINR)

Directed flow of deuterons in Xe+Cs(I) collisions at 3.8A GeV at the BM@N experiment

12:40-13:00 Victor Krylov (JINR)

Microservices for online event data handling in MPD experiments

Baldin ISHEPP XXVI, September 15-20, 2025

Scientific Programme

September 19, Friday Parallel Session I VBLHEP Conference Hall

Dynamics of multiparticle production

Chairman: A. Baldin

09:00-09:30 *Elena Kokoulina (JINR)*

Gluon dominance model and multiparticle production

09:30-09:50 Lev Alimov (Russia)

DD-pair production in the Parton Reggeization Approach within SPS and DPS scenarios

09:50-10:10 Stanislav Smolyansky and Vadim Dmitriev (Russia)

Exact Solutions in Kinetic Theory of the Vacuum Particle Production in SF QED and Graphene

10:10-10:30 Roman Nikolaenko (Russia)

Particles production in ATROPOS string fragmentation model

Coffee break 10:30-10:50

Chairman: E. Kokoulina

10:50-11:10 Aida Galoyan (JINR)

Charmed particle production in nucleus-nucleus interactions in Geant4 FTF model

11:10-11:30 Artem Korobitsin (JINR)

Bose–Einstein Correlations of Charged Pion and Kaon Pairs at RHIC Energies Using the UrQMD and SMASH+vHLLE Models

11:30-12:00 Nugzar Makhaldiani (JINR)

Negative binomial distribution in multiparticle production and fractal dimension of black body

12:00-12:30 Gennady Lykasov (JINR)

K-mesons production and isospin-symmetry in pp and AA collisions

September 19, Friday Parallel Session I VBLHEP Conference Hall

Relativistic heavy ion collisions

Chairman: V. Kireyeu

14:00-14:20 Aleksandr Svetlichnyi (Russia)

Forward neutrons from 12C-12C and 40Ca-40Ca collisions in the SPD experiment as a probe of nucleon-nucleon correlations

14:20-14:40 Tatiana Mikhailova (JINR)

Target dependence of fragmentation reaction cross-sections at intermediate energies and its calculation in the relativistic and low-energies oriented models

14:40-15:00 Kirill Galaktionov (Russia)

Addressing heavy ion collision parameters estimation challenges via neural network techniques

15:00-15:20 Nikita Bikmetov (JINR)

Collective flow harmonics correlations analysis for model data at Nuclotron-NICA energies

15:20-15:40 Vladimir Kovalenko (Russia)

Multiplicity dependent transverse momentum distributions of hadrons of different species in the extended multipomeron exchange model

15:40-16:00 Coffee break

Chairman: V. Kovalenko

16:00-16:30 Natalia Kolomoyets (JINR)

Analysis of light hadron spectra obtained with MPDRoot for Bi+Bi collisions at $\sqrt{s_{\scriptscriptstyle NN}}$ = 9.2 GeV

16:30-16:50 Olga Shaposhnikova (Russia)

Ratios of the average transverse energy density for φ , K+, K- and K* mesons in the range $\sqrt{s_{NN}}$ = 39 GeV - 2.76 TeV and hypothesis of a common production source

16:50-17:10 Viktar Kireyeu (JINR)

Identifying the mechanism of light nuclei production

17:10-17:30 Polina Gridiaeva (Russia)

Recovering collision energy characteristics from geometrically constrained data by machine learning

17:30-18:00 Ehtiram Shahaliyev (JINR)

First Measurements of Φ Meson Production in pp Collisions at sq_NN = 510 GeV

18:30 Banquet (VBLHEP canteen)

September 19, Friday Parallel Session II Auditorium 347 (3rd floor)

Relativistic heavy ion collisions

Chairman: V. Melezhik

09:00-09:30 *Alexandru Parvan (JINR)*

Transverse Momentum Spectra of Hadrons in the Blast-Wave Model with Local Equilibrium and Tsallis Statistics with Global Equilibrium

09:30-09:50 Valery Troshin (JINR)

Collective flow of lambda hyperons in the MPD experiment at NICA energies

09:50-10:10 *Ivan Borisov (Russia)*

Parton energy loss in Cu+Au and U+U collisions at $\sqrt{s_{NN}}$ =200 and 193 GeV, respectively

10:10-10:30 Alexey Povarov (Russia)

Directed, elliptic and triangular flow of charged hadrons in O + O, Kr + Kr and Xe + Xe collisions at $\sqrt{s_{NN}}$ = 6 GeV in UrQMD model for SPD experiment

Coffee break 10:30-10:50

Nuclear astrophysics

Chairman: A. Parvan

10:50-11:20 Vladimir Melezhik (JINR)

Threshold amplification of X(a,b)Y reactions: from muon-catalyzed fusion to electromagnetic formfactors of hyperons

11:20-11:50 Chitta Ranjan Das (JINR)

Strangelet Searches from Neutron Stars and Binary Mergers with Current and Future Observatories

11:50-12:10 Vladimir Kondratyev (JINR)

Magnetorotational supernova neutrino spectra vs mass ordering

12:10-12:30 Artur Nasakin (Russia)

Neutron Stars with Λ - and Ξ -Hyperons with Skyrme Potentials: Correlations and a Parametrization for the Maximum Mass

September 19, Friday Parallel Session II Auditorium 347 (3rd floor)

Dynamics of multiparticle production

Chairman: G. Musulmanbekov

14:00-14:30 Anton Baldin (JINR)

The development of the ideas of A.M.Baldin on description of multiparticle production in relativistic nuclear collisions based on the properties of the Lobachevsky space

14:30-14:50 Elina Baldina (JINR)

Self-similarity method in relativistic nuclear physics

14:50-15:10 Anastasia Ponomareva (JINR)

Application of Differential Geometry Methods for Analyzing Experimental Data on Multiple Particle Production in Relativistic Nuclear Physics

15:40-16:00 Coffee break

Studies of exotic nuclei in relativistic beams

Chairman: P. Zarubin

16:00-16:30 Genis Musulmanbekov (JINR)

The Structure of Light Nuclei in Strongly Correlated Quark Model

16:30-17:00 Sergey Afanasiev (JINR)

Synthesis of neutron-rich nuclei at the NICA complex

17:00-17:20 Denis Artemenkov (JINR)

Dissociation features of light relativistic nuclei in fragmentation process in nuclear track emulsions

17:20-17:40 **Dmitry Dryablov (JINR)**

Status of the SCAN-3 at the Nuclotron internal targets

17:40-18:00 Nadezhda Kornegrutsa (JINR)

Study the fragmentation of 7Be nuclei in mixed beam with nuclear track emulsion

18:30 Banquet (VBLHEP canteen)

September 19, Friday Parallel Session III NICA Hall (1st floor)

Projects NICA/MPD/SPD/BM@N at JINR

Chairman: D. Finogeev

09:00-09:20 Dmitrii Zinchenko (JINR)

Performance of the Vector Finder toolkit for track reconstruction at the BM@N experiment

09:20-09:40 Aleksandr Zubankov (Russia)

Measurements of neutrons in the Xe+CsI reaction by the Highly Granular Neutron Detector prototype in the BM@N experiment

09:40-10:00 Arseniy Shabanov (Russia)

A novel method for neutron energy spectrum reconstruction with the HGND in the BM@N experiment

10:00-10:20 Vladimir Bocharnikov (Russia)

Graph Neural Network-based Neutron Reconstruction in the HGND at the BM@N experiment

10:30-10:50 Coffee break

Chairman: A. Shabanov

10:50-11:10 Dmitry Finogeev (Russia)

The Highly Granular Time-of-Flight Neutron Detector for the BM@N experiment

11:10-11:30 Dmitrii Dementev (JINR)

Development of a New Silicon Tracking Station for the BM@N Hybrid Tracker

11:30-11:50 Victor Baryshnikov (JINR)

Status of the Electromagnetic Calorimeter Testing for the MPD Experiment at the NICA Collider

11:50-12:10 Slavomir Hnatic (JINR)

TPC Tracking for the MPD Experiment

12:10-12:30 Sudhir Pandurang Rode (JINR)

Electron Identification using Machine Learning in the MPD Experiment at NICA

12:30-12:50 Alexander Strizhak (Russia)

Tasks and status of Forward Hadron Calorimeter at MPD

September 20, Saturday Plenary Session VBLHEP Conference Hall

Chairman: S. Bondarenko

09:00-09:40 Alexander Zakharov (Russia/JINR)

Nearly forgotten results in development of physical cosmology

09:40-10:20 Oleg Teryaev (JINR)

Polarization and gravity in hadronic and heavy-ion collisions

10:20-10:40 Coffee break

Chairman: O. Teryaev

10:40-11:20 **Pavel Zarubin (JINR)**

Highlights of Unstable States in Relativistic Dissociation of Light Nuclei

11:20-11:50 Aleksandr Malakhov (JINR)

Jets and quarks at the NICA collider

11:50-12:00 **Serge Bondarenko, Aleksandr Malakhov (JINR) (JINR)** Closing

12:00 Coffee (Na pososhok)