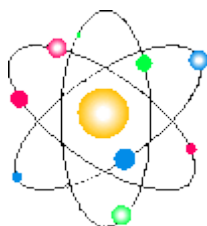


## **Session Program**

24–31 Aug 2025



# **The XVI-th International School-Conference "The Actual Problems of Microworld Physics"**

***Plenary section***

# Monday 25 August

09:30

## Plenary section

Session | Location: Hotel "Forum", main auditorium

09:30–09:50 **Welcome remarks**

09:50–10:50 **The BM@N experiment at JINR: status and plans**

**Speaker**

Prof. Richard Lednicky

10:50–11:20 **Coffee**

11:20–12:05 **Spin Physics Detector at NICA**

**Speaker**

Prof. Victor Kim

12:05–12:50 **FLAP collaboration: Status and Perspectives**

**Speaker**

Anton Baldin

13:00

14:00

## Plenary section

Session | Location: Hotel "Forum", main auditorium

14:00–14:45 **Electromagnetic radiation in plasma: Density of states effects and asymptotic tunneling**

**Speaker**

Prof. Sergey Gaponenko

14:45–15:30 **Physics at MPD experiment**

**Speaker**

Олег Рогачевский

15:30–16:00

**The status and prospects for the production of detector materials in Russia and Belarus: an industrial production of the demanded materials and cutting-edge design at the atomic level**

**Speakers**

Prof. Mikhail Korzhik, Prof. Ilia Komendo

16:00–16:30 **Coffee**

16:30–17:15 **Conditionally built states for quantum effects**

**Speaker**

Prof. Dmitri Mogilevtsev

17:15–17:45 **Parametric X-ray radiation – from theory to technology**

**Speaker**

Prof. Ilia Feranchuk

17:45–18:30

**Spin effects of quantum electrodynamics in superstrong fields of crystals and the possibility of their observation at future electron-positron colliders**

**Speaker**

Prof. Victor Tikhomirov

19:00

## Tuesday 26 August

09:00

### Plenary section

Session | Location: Hotel "Forum", main auditorium

09:00–09:45 **Future experiments in high energy physics**

**Speaker**

Grigory Trubnikov

09:45–10:30 **Superheavy elements-present and future**

**Speaker**

Mikhail Itkis

10:30–10:40 **Common photo shoot**

10:40–11:00 **Coffee**

11:00–11:45 **Methods and technologies of data processing in heterogeneous computing environments**

**Speaker**

Vladimir Korenkov

11:45–12:30 **Methods and algorithms of experimental data processing at JINR**

**Speaker**

Dr Nikolay Voytishin

12:30–13:15

**Latest achievements in the field of thermonuclear energy at the Institute of Plasma Physics, Chinese Academy of Sciences**

**Speaker**

Viktoriia Saklakov

13:15

14:00

### Plenary section

Session | Location: Hotel "Forum", main auditorium

14:00–14:45

**Research in the field of radiation biology at accelerator complexes and their application in space research and nuclear medicine**

**Speaker**

Александр Бугай

14:45–15:30 **Radiobiology of Auger electron emitters**

**Speaker**

Dr Павел Лобачевский

15:30

## Wednesday 27 August

09:00

### Plenary section

Session | Location: Hotel "Forum", main auditorium

09:00–09:45

**Physics reach at CEPC, and impact of AI tools**

**Speaker**

Manqi RUAN

09:45–10:30

**Experiments at the Circular electron-positron collider. The Higgs boson study**

**Speaker**

Prof. Юрий Кульчицкий

10:30

10:50

### Plenary section

Session | Location: Hotel "Forum", main auditorium

10:50–11:30

**Highlights of Unstable States in Relativistic Dissociation of Light Nuclei**

**Speaker**

Pavel Zarubin

11:30–11:50

**SHINE station at accelerator complex NICA: Status and Perspectives. Applied points**

**Speaker**

Сергей Четвериков

11:50–12:20

**Monte-Carlo simulations and Nuclear Spectroscopy for Muon Capture Experiments**

**Speaker**

Абдуллах Шихада

12:20–12:40

**Analysis of hypernuclei and strange particles in the BM@N experiment**

**Speaker**

Ramin Barak

12:40–13:00

**Possibilities to observe nuclear optical phenomena for protons and nuclei at Nuclotron-M and NICA**

**Speaker**

Sergei Anishchenko

13:00

14:00

### Plenary section

Session | Location: Hotel "Forum", main auditorium

14:00–14:30

**Software development for MPD experiment**

**Speaker**

Олег Рогачевский

14:30–15:00

**MPD TPC assembling, NICA project**

**Speaker**

Sergey Movchan

15:00–15:30

**Thermal stabilization system of TPC: challenges, progress and status**

**Speaker**  
Alexander Fedotov

15:30–15:45

### High-performance computations of the temperature field and electron drift in the TPC of MPD/NICA

**Speaker**  
Maryia Miadzvedzeva

15:45–16:00

### Ionization of the drift gas volume of the TPC detector by UV nanosecond laser pulses

**Speaker**  
Julia Shafarevich

16:00–16:15

### Hydrodynamic calculation of the cooling system of MicroMEGAS electronics for SPD detector

**Speaker**  
Ilya Zur

16:15

# Thursday 28 August

09:00

## Plenary section

Session | Location: Hotel "Forum", main auditorium

09:00–09:45 Recent results from the ATLAS experiment

Speaker

Prof. Юрий Кульчицкий

09:45–10:30 Probing anomalous quartic gauge couplings and ALP-top interaction at future colliders

Speaker

Alexander Kisselev

10:30

11:00

## Plenary section

Session | Location: Hotel "Forum", main auditorium

11:00–11:40

High Energy Nuclear Optics of Polarized Protons and Nuclei: Research at Complex Nuclotron M-NICA

Speaker

Vladimir Baryshevsky

11:40–13:00 Diquarks are the reality or why do we need them

Speaker

Stepan Shimanskiy

13:00

14:00

## Plenary section

Session | Location: Hotel "Forum", main auditorium

14:00–14:40 Polarization effects in the process of elastic electron-proton scattering

Speaker

Mikhail Galynskii

14:40–15:00 Exact calculation of photon polarization observables in Bethe-Heitler process

Speaker

Dr Юрий Быстрицкий

15:00–15:35 QED radiative corrections to lepton-proton scattering

Speaker

Alexander Ilyichev

15:35–15:55 Inverse emission in dilepton production at CMS LHC

Speaker

Prof. Vladimir Zykunov

15:55–16:15 Polarized photon-photon collisions in ReneSANCe

Speaker

Renat Sadykov

16:15

16:30

**Plenary section****Session** | **Location:** Hotel "Forum", main auditorium**16:30–17:00** Gluon dominance model and multiparticle production**Speaker**

Prof. Елена Кокоулина

**17:00–17:40** Axion physics: New theoretical results**Speaker**

Alexander Silenko

**17:40–18:10** Feynman integral calculation with differential equations**Speaker**

Владимир Бытьев

**18:10–18:40** Dual superfield approach to supersymmetric mechanics with spin variables**Speaker**

Dr Stepan Sidorov

**18:40–19:00** Influence of irradiation by heavy ions on characteristics of Monolayer Graphene**Speaker**

Nelli Pukhaeva

19:00

## Friday 29 August

09:00

### Plenary section

Session | Location: Hotel "Forum", main auditorium

09:00–09:40

**Some aspects of relativistic kinematics from the point of view of Lobachevsky geometry**

**Speaker**

Yurii Kurochkin

09:40–10:40

**Study of jet properties with CMS data**

**Speaker**

Сергей Шульга

10:40–11:00

**Bounds on the mass and mixing of  $Z'$  and  $W'$  bosons decaying into different pairings of  $W$ ,  $Z$  or Higgs bosons using CMS and ATLAS data at the LHC**

**Speaker**

Inna Serenkova

11:00

11:15

### Plenary section

Session | Location: Hotel "Forum", main auditorium

11:15–11:45

**A method for analytical calculations of corrections to the anomalous magnetic moments of leptons based on the application of the Mellin-Barnes representation**

**Speaker**

Olga Solovtsova

11:45–12:15

**Form Factor and Mean-Square Radius for the Vector Current of Composite System of Two Fermions in the Relativistic Quasipotential Approach**

**Speaker**

Yuriy Chernichenko

12:15–12:35

**Description of eta and eta prime mesons**

**Speaker**

Sergey Avakyan

12:35–12:55

**Interactions of Heavy Mesons**

**Speaker**

Elena Avakyan

12:55–13:15

**Parameters of Poincare-covariant quark model for heavy sector mesons**

**Speaker**

Dr Vadzim Haurysh

13:15

14:00

### Plenary section

Session | Location: Hotel "Forum", main auditorium

14:00–14:30

**Parametric x-rays: Quo vadis? To 40th anniversary of the first experimental observation**

**Speaker**

Alexander Lobko

14:30–15:00

**Coherent Cherenkov radiation produced by electron bunches from a microtron in periodic structures****Speaker**

Pavel Molchanov

15:00–15:20

**Microservices for event data handling in modern HEP experiments****Speaker**

Мг Виктор Крылов

15:20–15:40

**32-channel readout electronics boards for the straw tracker of the COMET experiment****Speaker**

Maxim Kovalenko

15:40–16:05

**The actual problems of nuclear knowledge management at the level of microworld physics****Speaker**

Svetlana Sytova

16:10

16:45

**Plenary section**

Session | Location: Hotel "Forum", main auditorium

16:45–17:05

**Two-dimensional two-particle quasipotential equations in the relativistic configurational representation and some of their exact solutions****Speaker**

Valery Kapshai

17:05–17:20

**Approximate analytical solutions of two-particle equations in the case of superposition of the one-boson exchange potentials****Speaker**

Yury Grishechkin

17:20–17:35

**Delay time of particle tunneling through a smooth parabolic barrier of finite height****Speaker**

Alexander Baran

17:35–17:55

**Quantum-Mechanical Particle in the Analogue of the Cornell Potential in the Friedman-Lobachevsky Universe****Speaker**

Nadezda Shaikovskaya

17:55–18:15

**Fundamental decoherence of a photon in vacuum****Speaker**

Sergey Cherkas

18:15–18:30

**The tensor analyzing power component T20 in the reaction of coherent pion photoproduction on the deuteron in the Delta resonance region****Speaker**

Maxim Nevmerzhitsky

18:50