

# Problems of the Modern Mathematical Physics – PMMP'24

19-23 February 2024, Dubna

February 19, Monday

Chairmans: **10:00-12:30 – Alexey Isaev**  
**14:00-16:00 – Joseph Buchbinder**  
**16:30-18:10 – Konstantin Stepanyantz**

<b>09:45 – Opening</b>	
10:00-11:00	<b>Dmitri Kazakov</b> Суперсимметрия в физике элементарных частиц
11:00-11:30	<i>Coffee break</i>
11:30-12:30	<b>Evgeny Ivanov</b> Неизбежность гармонического суперпространства
12:30-14:00	<i>Lunch</i>
14:00-15:00	<b>Konstantin Stepanyantz</b> Quantum properties and exact results in supersymmetric theories revealed with the help of the higher derivative regularization
15:00-16:00	<b>Alexei Rosly</b> Self-Dual YM Theory: a Conformal Theory with a Trace Anomaly
16:00-16:30	<i>30 minutes break</i>
16:30 20 + 5 minutes	<b>Sergey Fedoruk</b> 4D and 6D infinite spin (super)particles and fields
16:55 20 + 5 minutes	<b>Boris Merzlikin</b> Two-loop divergences in 6D, N=(1,1) SYM
17:20 20 + 5 minutes	<b>Alexandra Budekhina</b> On the divergences of 6D, N=(1,0) supersymmetric four-derivative gauge theory
17:45 20 + 5 minutes	<b>Nikita Zaigraev</b> N=2 superconformal higher spin multiplets
<b>18:30 – Welcome party!</b>	

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February 20, Tuesday

Chairmans: **10:00-16:00 – Nikolay Tyurin**  
**14:00-16:00 – Radoslav Rashkov**  
**16:30-19:00 – Michael Bordag**

10:00-11:00	<b>Radoslav Rashkov</b> On the quantum dynamics of states/operators: some expected and unexpected relations
11:00-11:30	<i>Coffee break</i>
11:30-12:30	<b>Zoran Rakić</b> On the Schwarzschild type metric in nonlocal de Sitter gravity
12:30-14:00	<i>Lunch</i>
14:00-15:00	<b>Mikhail Vasiliev</b> Higher-Spin Gauge Theory: From Basics to Recent Results
15:00-16:00	<b>Michael Bordag</b> Chromomagnetic approach to the vacuum of QCD
16:00-16:30	<i>Coffee break</i>
16:30 25 + 5 minutes	<b>Gor Sarkissian</b> On Regge symmetry of the Racah-Wigner symbols of $SL(2, \mathbb{C})$ group
17:00 25 + 5 minutes	<b>Ljudmila Bordag</b> On the entanglement in a two qubit system and the torus action on the Grassmannian $Gr(2,4)$
17:30 25 + 5 minutes	<b>Dmitry Galakhov</b> BPS Algebraic Structures Related to Toric Calabi-Yau Manifolds
18:00 25 + 5 minutes	<b>Nikita Tselousov</b> Явные представления БПС алгебр
18:30 25 + 5 minutes	<b>Yaroslav Drachov</b> Generalized $\widetilde{W}$ algebras

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February 21, Wednesday

Chairmans: **10:00-12:30 – Irina Pirozhenko**  
**14:00-16:00 – Andrei Barvinsky**  
**16:30-18:30 – Dmitri Fursaev**

10:00-11:00	<b>Andrei Barvinsky</b> The problem of time in quantum cosmology and origin of the Universe
11:00-11:30	<i>Coffee break</i>
11:30-12:30	<b>Sergey Sushkov</b> Cosmological models with arbitrary spatial curvature in the theory of gravity with non-minimal derivative coupling
12:30-14:00	<i>Lunch</i>
14:00-15:00	<b>Mikhail Volkov</b> Black holes with electroweak hair
15:00-16:00	<b>Dmitri Fursaev</b> Shockwaves, null strings, Carroll symmetries, and asymptotic complexity
16:00-16:30	<i>Coffee break</i>
16:30 25 + 5 minutes	<b>Kirill Bazarov</b> Backreaction issue for the black hole in de Sitter spacetime
17:00 25 + 5 minutes	<b>Dmitrii Diakonov</b> Is the Euclidean path integral always equal to the thermal partition function?
17:30 25 + 5 minutes	<b>Nikita Kolganov</b> Reconstruction of instantonic systems from exactly solvable Schroedinger operators
18:00 25 + 5 minutes	<b>Wladyslaw Wachowski</b> Off-diagonal heat kernel expansions for higher-order minimal and causal operators

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February 22, Thursday

Chairmans: **10:00-12:30 – Konstantin Alkalaev**  
**14:00-16:00 – Andrei Mironov**  
**16:30-18:30 –**

10:00-11:00	<b>Andrei Mironov</b> Hidden symmetries of matrix models
11:00-11:30	<i>Coffee break</i>
11:30-12:30	<b>Sergey Derkachov</b> Toda chain: R-matrix, Q-operator, orthogonality and completeness of eigenfunctions
12:30-14:00	<i>Lunch</i>
14:00-15:00	<b>Valeriy N. Tolstoy</b> Graded superextensions of orthosymplectic supersymmetry $osp(1/2 n; C)$ and their real (anti-) de Sitter forms
15:00-16:00	<b>Andrei Zotov</b> Supersymmetric spin Ruijsenaars-Macdonald operators and $q$ -deformed Haldane-Shastry models
16:00-16:30	<i>Coffee break</i>
16:30 25 + 5 minutes	<b>Dmitry Ponomarev</b> No-go theorem for higher-spin geometry
17:00 25 + 5 minutes	<b>Tsvetan Vetsov</b> Geometry of thermodynamic processes
17:30 25 + 5 minutes	<b>Alexander Gusev</b> Spectrum and point symmetries of $N$ identical 1D-oscillators
18:00 25 + 5 minutes	<b>Maksim Reva</b> From equations in coordinate space on Feynman integrals to Picard-Fuchs and back
<b>19:30 – Dinner at Scientist's club</b>	

# Problems of the Modern Mathematical Physics – PMMP

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February 23, Friday

Chairmans: **10:00-12:30 – Sergey Fedoruk**  
**14:00-16:00 – Sergey Derkachov**  
**16:30-18:30 – Sergey Krivonos**

10:00-11:00	<b>Konstantin Alkalaev</b> Gravitational Wilson networks in AdS and boundary CFT correlators
11:00-11:30	<b>Coffee break</b>
11:30-12:30	<b>Alexey Isaev</b> Generalization of the Bargmann-Wigner approach to constructing relativistic fields
12:30-14:00	<b>Lunch</b>
14:00-15:00	<b>Andrei Shafarevich</b> Semi-classical quantization for equations with singularities
15:00 25 + 5 minutes	<b>Slava Didenko</b> On the higher-spin symmetry breaking in the bulk
15:30 25 + 5 minutes	<b>Nikita Misuna</b> On unfolded approach to gauge theories
16:00-16:30	<b>Coffee break</b>
16:30 25 + 5 minutes	<b>Anatoliy Korybut</b> On z-dominance, shift symmetry and spin locality in higher-spin theory
17:00 25 + 5 minutes	<b>Victor Mishnyakov</b> Superintegrability of the $\beta$ -deformed monomial matrix models and Uglov polynomials
17:30 25 + 5 minutes	<b>Anastasia Oreshina</b> Superintegrability, W-operators and matrix integrals – three sides of a coin through deformations
<b>18:00 – Closing</b>	