- Зал A – большой конференц-зал Института физики НАН Беларуси
- Зал B – конференц-зал ученого совета Института физики НАН Беларуси, 1 этаж
- Зал C – малый конференц-зал Института физики НАН Беларуси, 2 этаж (ком. 218, корпус 5) - Methods of Non-Euclidean Geometry in Physics and Mathematics.
- Зал D – малый конференц-зал Института физики НАН Беларуси, 1 этаж (ИМАФ 1 корпус, ком. 144)
- Зал E – холл большого конференц-зала Института физики НАН Беларуси
- ЗАЛ G – комната № 221, ИМАФ 1 корпус - Methods of Non-Euclidean Geometry in Physics and Mathematics

METHODS OF NON-EUCLIDEAN GEOMETRY IN PHYSICS AND MATHEMATICS (BGL-9)

9.00 – 11.00:   Registration   (HALL C)
11.00 – 11.30:   Opening   (HALL C)

SECTION – FIELD THEORY   (HALL C)
Chair **Kurockin Yu.A.;** computer **(Mel'nik A.)**

11-30 – 12.00
Sitenko Yu.A., *Bogolyubov Institute for Theoretical Physics, National Academy of Sciences of Ukraine*
Fiber bundles, non-Euclidean geometry and the Casimir effect.

12-00 – 12-30
Polyakov M.V., Vladimirov A.A., *Institute for Theoretical Physics, Ruhr– University Bochum, Bochum, Germany*
Leading infrared logarithms for sigma-model with fields on arbitrary Riemann manifold.

12-30 – 13.00
Rybakov Yu.P., *Peoples' Friendship University of Russia*
Spinor realization of Skyrme - Faddeev chiral model of particles.

13.00 – 15.00:   LUNCH
SECTION – COSMOLOGY AND DYNAMICS (HALL C)
Chair **Minkevich A.V.;**   computer (**Dudko I.**)

15.00 – 15.30
Minkevich A.V., *Belarusian State University, Minsk*
Space-time geometry, gravitational interaction and regular accelerating Universe.

15.30 – 16.00
Silenko A., *Research Institute for Nuclear Problems of Belarusian State University*
Connection between electromagnetism and gravity

16.00 – 16.30
Minkevich A.V., Kudin V.I., Garkun A.S.*,   Belarusian State University; Belarusian National Technical University; Department of Phys.Math. and Inf. NASB*
Limiting energy density and massive gravitating objects in Poincare gauge theory of gravity.

SECTION – MATHEMATICAL ASPECTS (HALL G)

Chair **Grushevskaya H.V**.;   computer (**Man'ko A**.)

15.00 – 15.30
Balan V., Red'kov V., Neagu M., *University Politehnica of Bucharest IP NASB, University Transilvania of Brasov*
The det-induced m-th root Finsler geometry of Mueller-type submanifolds

15.30 – 16.00
Ушаков Е.А., *Белорусский государственный университет*
Применение неевклидовой геометрии в задачах релятивистской физики.

16.00 – 16-30
Balan V., Neagu M., Oana A., Krylova N.G., Grushevskaya H.V., *University Politehnica of Bucharest, University Transilvania of Brasov, Belarusian State University*
The geometry of jet Hamiltonians in Langmuir-Blodgett films.

16.30 – 17.00: Coffee-break

SECTION – COSMOLOGY AND DYNAMICS (HALL C)

Chair **Vyblyi, Yu.P**.; computer (**Dudko I.**)

17.00 – 17.30
Leonovich A., Vyblyi Yu., *Belarusian State University of Informatics and Radioelectronics, IP NASB*
Spherical gravitational waves in the weak gravitational field

17.30 – 18.00
Tarasenko A.N., Komarov S.O., Gorbatsievich A.K., *BSU, Minsk, Belarus*
Motion reconstruction of compact objects in the vicinity of a black hole by its electromagnetic radiation.

18.00 – 18.30
Gorbatsievich A.K., Shaplov A.O., *BSU, Minsk, Belarus*
The geodesic structure of the spherically symmetric static solution for a central body within the framework of the 5-dimensional projective unified field theory.

SECTION – QUANTUM SYSTEMS (HALL G)

Chair **Krylov G.G.**;   computer (**Man'ko A**.)

17.00 – 17.30
Sanin A.L.,Smirnovsky S.A., *Peter the Great St.Petersburg Polytechnic University*
Quantum Matheu oscillator with quartic potential and ohmic friction.

17.30 – 18.00
Grushevskaya H., Gaisyonok V., Krylov G., *Belarusian State University, Minsk*
Topological current contribution to AC   conductivity of graphene: quasi-relativistic field theory approach.

18.00 – 18.30
Kudryashov V.V., *IP NASB*
Approximate radial wave functions for a scalar particle with polarizability in the presence of the Coulomb field.

10.00 – 13.00: V CONGRESS OF PHYSICISTS OF BELARUS, OPENING AND PLENARY SECTION

13.00 – 14.30:   Lunch

SECTION – FUNDAMENTAL INTERACTIONS   (HALL C)

Chair **Kudryashov V.V.**; computer (**Mel'nik A.)**

14.30 – 15.00
Gromov N.A., *Komi Science Center UrD RAS*
Elementary particles theory in the early Universe.

15.00 – 15.30
Shaparau V., Kuvshinov V., *JIPNR-Sosny NAS of Belarus*
Nonperturbative gluon correlations in QCD jet ring

15.30 – 16.00
Feranchuk I., Skoromnik O., Lu D., Krivulko K., *Belarusian State University*
Self-consistent way for regularization of ultraviolet divergence in a model of a quantum field.

16.00 – 16.30:   Coffee-break

SECTION – QUANTUM SYSTEMS (HALL G).

Chair **Pogosyan G.S;** computer (**Baran A**.)

14.30–15.00
Kurochkin Yu.A., Otchik V.S., Pogosyan G.S., Petrosian D*., IP NASB, Yerevan State University, Armenia*
Eigenfunction expansions in the imaginary Lobachevsky space.

15.00 – 15.30
Otchik V.S., *IP NASB*
Two Coulomb centers problem in the Lobachevsky space.

15.30 –16.00
Yu. Kurochkin, V. Otchik, D. Petrosyan, G. Pogosyan, *IP NASB, Yerevan State University, Armenia*
The trajectories of the classical Kepler-Coulomb problem in the imaginary Lobachevsky space.

16.00 – 16.30: Coffee-break

SECTION – DYNAMICAL SYSTEMS (HALL C)

Chair **V. Balan**; computer (**Mel'nik A.)**

16.30 – 17.00
Grushevskaya H.V., Krylova N.G., *Belarusian State University, Minsk*
The distortion and S-curvature of Langmuir monolayer space under the action of electro-capillary forces

17.30 – 18.00
Serow D.W., *Peter the Great St.Petersburg* Polytechnic *University*
Additive Metrics for Birkhoff's Curves.

18.00 – 18.30
S.L. Cherkas, V.L. Kalashnikov, *Institute for Nuclear Problems, Belarusian State University*
Quantum mechanics allows setting initial conditions at a cosmological singularity.

SECTION PHYSICS AND MATHEMATICS   (HALL G)

Chair   Pletuykhov V.A.**;** computer (**Baran A**.)

16.30 – 17.00
Pletuykhov V.A., *Brest State University named after A.S. Pushkin*
The Higgs boson in the theory of relativistic wave equations

17.00 –17.30
Ovsiyuk E.M., Kisel V.V., Red'kov V.V.*, Mozyr State Pedagogical University, Bel. State Univ. of Informatics and Radioelectronics, IP NASB*
Spin 1/2 particle with anomalous magnetic moment in presence of external magnetic field, exact solutions

17.30 –18.00
Balan V., Veko O.V., Ovsiyuk E.M., Red'kov V.M.   *University Politehnica of Bucharest, Gymnasium, Kalinkovichi; Mozyr State Pedagogical Univ. IP NASB*
The Dirac equation in parabolic cylindrical coordinates, possible effects of the spinor structures in quantum physics

18.00 – 18.30
Polotovskiy G., Lobachevsky State University of Nizhni Novgorod, Russia
Феномен провинции: очерк истории математики в Нижнем Новгороде

19.00: WELCOME PARTY

CONFERENCE PROGRAM BGL-9

SECTION – FUNDAMENTAL INTERACTIONS (HALL C)

Chair **Gilewsky V.V.**; computer **(Baran A.)**

9.00 – 9.30
Grushevskaya H., Krylov G. Belarusian State University, Minsk
Simulation of graphene with partial degeneration of band structure: Fermi arcs and Majorana semi-metal model.

9.30 – 10.00
Knyazev M.A., *Belarussian National Technical University*
Calculation of inflanton field.

10.00 – 10.30
Tarakanov A.N., *Institute of Informational Technologies, Belarusian State University of Informatics and Radioelectronics.*
On the possible trajectories of spinning particles in an external electromagnetic fields.

SECTION – DYNAMICAL SYSTEMS (HALL G)

Chair **Knyazev M.A.**; computer **(Shoukavy Dz.)**

9.00 – 9.30
Boyarkin O.M., Boyarkina G.G., Makhnach V.V., *International Sakharov Environmental University, Minsk*
Higgs boson production at the electron-positron collider.

9.30 – 10.00
Andreev V.V., Deryuzhkova O.M., Maksimenko N.V., *Gomel State University*
Spin dependent dipole polarizabilities and characteristics of the nucleon, related with parity violation.

10.00 – 10.30
A.A. Pankov**,** A.V. Tsytrinov, *GSTU*
Unique R-parity violating sneutrino exchange signature at ILC with polarized beams.

10.30 – 11.00: Coffee-break

SECTION – FUNDAMENTAL INTERACTIONS (HALL C)
Chair **Levchuk M.I.**; computer   (**Baran A.**)

11.00 – 11.30
Michael Levchuk, *IP NASB*
On possible inconsistency of data on the total photoabsorption cross section for the deuteron in the Δ region

11.30 – 11.50
Andreev V.V., *Gomel State University*
On solving the Schrodinger equation with hypersingular kernel in momentum space.

11.50 – 12.10
Babich K.S., Andreev V.V., *Gomel State University*
A new high precision method for solution of integral equations for two particles bound systems with the Cornell potential in momentum space**.**

12.10 – 12.30
Andreev V.V., Haurysh V.Yu. , *Gomel State University*
Radiative decays of vector mesons in Poincare-covariant quark model.

12.30 – 13.00
Gilewsky V.V.,   Satsunkevich I.S, *JIPNR-Sosny, Minsk, Belarus*
Neutrino mass matrix parameterization.

SECTION – FUNDAMENTAL INTERACTIONS   (HALL G)
Chair **Shoukavy Dz.**; computer (**Shoukavy Dz.**)

11.00 – 11.30
Maksimenko N.V., Vakulina E.V.,   Kuchin S.M., *Gomel State University, Брянский государственный университет им. ак. И.Г.Петровского*
Dipole spin polarizabilities and gyrations of spin 1 particles in the Duffin-Kemmer-Petiau formalism.

11.30 – 12.00
Капшай В.Н., Фиалка С.И. Ортогональные системы функций в пространстве Лобачевского и их приложение в квазипотенциальном подходе

12.00 – 12.30
Shoukavy Dz., IP NAS Belarus
An analysis of the Tohoku Beam test of electron calorimeter prototype for COMET experiment.

12.30 – 13.00
Manko A.Yu., Shulyakovsky R.G., *IP NAS Belarus*
One-Loop radiative corrections for the two-photon production of leptons processes at colliders

13.00 – 14.30:   Lunch

SECTION – NEW SEARCHES   (HALL C)

Chair   **Red'kov V.M.;** computer **(Man'ko A.)**

14.30 – 15.00
Павлов Д.Г., *НИИ Гиперкомплексных систем в геометрии и физике, Фрязино, Россия*
Сферически симметричные решения волновых уравнений в некоторых псевдофинслеровых пространствах.

15.00 – 15.30
Кокарев С.С., *РНОЦ Логос (Ярославль) – НИИ ГСГФ (Фрязино), Россия*
Интегральная гиперболическая динамика частиц в пространстве-времени Минковского

15.30 – 16.00
Панчелюга В.А., Панчелюга М.С., *Институт теоретической и экспериментальной биофизики, НИИ Гиперкомплексных систем в геометрии и физике*
Периоды во временных рядах флуктуаций скорости радиоактивного распада и возможный механизм их образования.

SECTION – COSMOLOGY **(HALL G)**
Chair **Rudoy, YU.G.;** computer   **(Dudko I.)**

14.30 – 15.00
Minkevich A.V**.,** Garkun A.S**.,** Kudin V.I., *Belarusian State University; Mathematics and Informatics of NAS of Belarus; Belarusian National Technical University*
Cosmological Models with Two Torsion Functions in Poincare Gauge Theory of Gravity.

15.00 – 15.30*, Russia*
Rudoy Yu.G. , Vernigora I.A. *, Russian Peoples' Friendship University, Moscow*
Approximate Extension of the Lorentz Symmetry up to Conformal in the Limit of Ultrahigh Energies

15.30 – 16.00
Vyblyi Yu., Dudko I., *IP NAS Belarus, Minsk*
Tensor theory of gravity with linear connection between metrics and potential

16.00 – 16.30: Coffee-break

SECTION – WAWE EQUATIONS (HALL C)

Chair **Kisel V.A.**; computer   **(Manko A.)**

16.30 – 16.50
Simulik V.,   *Institute of Electron Physics of National Academy of Sciences of Ukraine*
Relativistic canonical quantum mechanics of arbitrary spin

16.50 – 17.10
Simulik V.,   *Institute of Electron Physics of National Academy of Sciences of Ukraine*
Manifestly covariant field equations for arbitrary spin as a consequences of relativistic canonical quantum mechanics.

17.10 – 17.30
Veko O.V., *Gymnasium, Kalinkovichi, Belarus*
Cox's particle in magnetic and electric fields on the Background of Lobachevsky geometry   *(will be presented by V. Red'kov).*

17.30 – 18.00
Кисель В.В.*, Belarusian State University of Informatics and Radioelectronics, Minsk*
О расширенных уравнениях для частиц со спином ноль (единица) в электромагнитных полях

18.00 – 18.30
Simylik V., *Institute of Electron Physics of National Academy of Sciences of Ukraine*
Field equations for spins s=3/2 and s=2

SECTION – HYSTORICAL NOTES (HALL C)
Chair **Kurockin Yu.A.;**   computer **(Dudko .)** .

9.00 – 9.30
Kurochkin Yu., *IP NASB, Minsk*
The Special relativity and Lobachevsky geometry.

9.30 – 10.00
Polotovskiy G., *Lobachevsky State University of Nizhny Novgorod, Russia*
Штрихи к портрету Н.Н. Боголюбова

10.00 – 10.30
Губина Е.В., *Lobachevsky State University of Nizhny Novgorod, Russia*
Жизнь и научная деятельность А.А. Андронова

10.30 – 11.00
Polotovskiy G.,   *Lobachevsky State University of Nizhny Novgorod, Russia*
Нижегородский математик Артемий Григорьевич Майер.

11.00 – 11.30: Coffee-break

11-30 – 13.00: POSTERS (HALL C)
Chair **Red'kov V.M.**

Hidezumi Terazawa. *Center of Asia and Oceania for Science (and Midlands Academy of Business and Technology), Japan.*
1. Varying Fundamental Physical Constants-Dark Energy, Dark Matter, and Strange Stars; 2. References of Varying Fundamental Physical Constants (Analytical review)

Valeriy V. Dvoeglazov, J. Irvin Guerrero Ibarra. *UAF, Universidad de Zacatecas, Mexico.* Rotational and Translational Properties of the Tensor Fields in Relativistic Quantum Mechanic

Дудко И.Г., Толкачев Е.А. *Институт физики НАН Беларуси.* Три типа дуальности преметрических уравнений электродинамики: геометрический аспект

Tomilchik L.M., *IP NASB.* The geodesic motion description as one-particle Lagrangian dynamics problem.

Ovsiyuk E., Dashuk K., Veko O., Ishkhanyan A., Red'kov V., *Mozyr State Ped. Univ.; Gymnasium, Kalinkovichi; Institute for Physical Research, Armenia; IP NASB.* Hydrogen Atom in de Sitter spaces

Zhukova N.I., *National Research University, Higher School of Economics, Nizhny Novgorod, Russia.* The structure of conformal foliations.

G.Yu. Tyumenkov, *F. Scoryna Gomel State University, Belarus.* Quasi-free double-time Green function of scalar many-body system with one spinor particle

13.00 – 15.00 LUNCH

15.00 – 17.00:

(HALL – C)   Kurochkin Yu.A, - Red'kov V.M.

Discussion, Proceedings,   BGL-10,   Closing

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Announcement

Valeriy Dvoeglazov,

Editor of the Book Series in the Nova Science Pubs. (NY, USA)

Dear Colleagues,

We continue the Book Series "Contemporary Fundamental Physics" in the Nova Science Pubs, NY, USA.   23 books have been published since 1999. The title of the next book is "Relativity, Gravitation, Cosmology: Beyond the Foundations". The page limit is 12 pages (ordinary LaTeX style). The deadline for submissions is Dec. 30, 2015. Looking forward to receiving your contributions.

Valeriy Dvoeglazov,   valeri@fisica.uaz.edu.mx

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