

Programme of International Meeting Physical Interpretations of Relativity Theory

Monday 1 July – Thursday 4 July 2013

Department of Physics, Bauman Moscow State Technical University, Russia
Department of Physics, University of Liverpool, Great Britain
Department of Computing & Engineering, University of Sunderland, Great Britain
United Gravitational Society of Russian Federation
Moscow Physical Society, Russia

Monday 1st July 2013. Conference Hall. Study Laboratory Building (Third floor).

9.00-10.00h Registration of delegates

10.00-10.30h Opening the PIRT Meeting

Chair: Peter Rowlands (University of Liverpool, G.B.)

10.30-11.00 *Vizgin Vladimir P.* (Institute for history of science and technology of RAS, Moscow, Russia) **The Centenary of the tensor-geometrical conception of gravitation – fundamental idea of the general relativity**

11.00-11.30 *Lukash V.N.* (Astro Space Center of Lebedev Physics Institute, Moscow, Russia) **Space-time singularities and cosmogenesis**

11.30-12.00 *Gorelik V.S.* (Lebedev Physical Institute, Moscow, Russia) **Photon-paraphoton conversion under laser excitation**

12.00-12.30 *Aminova A.V., Chumarov P.I.* (Department of Relativity Theory and Gravity, Kazan Federal University, Kazan, Russia) **The motion of particles in space-time of cylindrically symmetric wormhole**

12.30-13.00 *Bronnikov K.A., Melnikov V.N.* (Institute of gravitation and cosmology, Peoples' Friendship University of Russia, Moscow, Russia); *Svadkovski I.V., Rubin S.G.* (National Research Nuclear University "MEPhI", Moscow, Russia) **Variation of the fine-structure constant in multidimensional space**

13.00-14.00h Lunch Break

Chair: Gorelik Vladimir (Lebedev Physical Institute, Moscow, Russia).

14.00-14.30 *Rowlands P.* (Department of Physics, University of Liverpool, Oliver Lodge Laboratory, Liverpool, UK) **Does dark energy have a critical value?**

14.30-15.00 *Kudriavtcev Yu.S.* (St-Petersburg, Russia). **On correlation of the large scale structures of the quasars and galaxies**

15.00-15.30 *Meierovich B.E.* (P.L.Kapitza institute for physical problems of Russian Academy of Sciences, Moscow, Russia) **Theory of evolution of the Universe**

- 15.30-16.00** *Petrova L.I.* (Lomonosov Moscow State University, Department of Computing Mathematics and Cybernetics, Moscow, Russia) **The properties and specific features of the field-theory equations. The structure of physical fields**
- 16.00-16.20h** **Coffee Break**
- 16.20-16.40** *Babourova O.V., Frolov B.N., Lipkin K.N.* (Moscow State Pedagogical University) **Cosmological solution for the early Universe in a Cartan–Weyl space with the Deser–Dirac scalar field**
- 16.40-17.00** *Rubin Sergey* (National research nuclear university “MEPhI”, Moscow, Russia) **Emergence of symmetries**
- 17.00-17.20** *Babourova O.V., Frolov B.N.* (Moscow Pedagogical State University, Faculty of Physics and Informational Technologies, Moscow, Russia) **Consequences of the existence of the Deser--Dirac scalar field in Nature: dark energy and the black holes problems**
- 17.20-17.40** *Shestakov U.I.* (Russian Research Center «Kuchatov Institute», Moscow, Russia) **The nature of quasars in scalar model of gravitation**
- 17.40-18.00** *Mordvinov B.* (Russian Federal Nuclear Center - Zababakhin Institute of Technical Physics, Snezhinsk, Russia) **Dark matter within the bounds of a new cosmological model**
- 18.00h** **Close of the Monday Session of Lectures**

Tuesday 2nd July 2013. Conference Hall. Conference Hall. Study Laboratory Building

Chair: **Georgi Izmailov (Moscow Aviation Institute, Russia)**

- 9.00-9.30** *Rudenko V.* (Institute for Nuclear Research of the RAS, Moscow, Russia; Sternberg Astronomical Institute, Lomonosov [Moscow state university](#), Russia). **Detection of relativistic gravitational effects on ground plants and spacecrafts with the participation of RAS and MSU**
- 9.30-10.00** *Gladyshev V.O., Portnov D.I., Gladysheva T.M.* (Department of Physics, Bauman Moscow State Technical University, Moscow, Russia). **Experimental investigations of polarization of laser radiation in a rotating optical disk**
- 10.00-10.30** *Zakirov Ural* (Department of astronomy and space geodesy, Kazan University, Kazan, Russia). **The tests in the Kaluza-Klein gravitational theory under presence of the electromagnetic and reactive potentials**
- 10.30-11.00** **Coffee Break**
- 11.00-11.30** *Chub V.F.* (Moscow Institute for Physics and Technology, Dolgoprudny Russia) **Group-theoretical foundations of inertial navigation**
- 11.30-12.00** *Bezrukov L.* (Institute for Nuclear Research of the RAS, Moscow, Russia); *Kvashnin N.* (Institute of Laser Physics, Siberian Branch of the RAS, Novosibirsk, Russia); *Motyl'ov A.* (Sternberg Astronomical Institute, Lomonosov Moscow state university, Russia); *Oreshkin S.* (Sternberg Astronomical Institute, Lomonosov Moscow state university); *Popov S.* (Institute for Nuclear Research of the RAS, Moscow, Russia; Sternberg Astronomical Institute, Lomonosov Moscow state university, Russia); *Samoilenko A.* (Institute for Nuclear Research of the RAS, Moscow, Russia; Sternberg Astronomical

Institute, Lomonosov Moscow state university, Russia); *Skvortsov M.* (Institute of Laser Physics, Siberian Branch of the RAS, Novosibirsk, Russia); *Udin I.* (Sternberg Astronomical Institute, Lomonosov Moscow state university, Russia; Institute of Laser Physics, Siberian Branch of the RAS, Novosibirsk, Russia). **New opto-acoustic gravitational detector in BNO INR RAS**

12.00-12.30 *Lebedev Yury* (Bauman Moscow State Technological University, Moscow, Russia, International Center for Everettic Studies, Israel); *Amnuel Pavel R.* (International Center for Everettic Studies, Israel); *Dulphan Anna Ya.* (The National Technical University "Kharkiv Polytechnic Institute", Kharkov, Ukrain). **The Everett's Axiom of Parallelism**

12.30-13.00 *Ilichev Leonid V.* (Institute of Automation and Electrometry SB RAS, Novosibirsk State University, Novosibirsk, Russia). **Local quantum logics in the topos approach to branching space-time**

13.00-14.00h Lunch Break

Chair: Valentin Rudenko (Institute for Nuclear Research of the RAS; Sternberg Astronomical Institute, Lomonosov Moscow state university, Russia).

14.00-14.30 *Pokrovsky Yu.E.* (Russian Research Center "Kurchatov Institute", Moscow, Russia) **Gravitational Wave Radiation by Dark Matter Bodies in the Sun**

14.30-15.00 *Siparov S.V.* (Department of Physics, State University of Civil Aviation, St-Petersburg, Russia) **Geometry in the models with long-range interaction**

15.00-15.30 *Izmailov G.N.* (Moscow Aviation Institute, Moscow, Russia) **Minimal black holes and their stability**

15.30-16.00 *Fil'chenkov M.L., Laptev Yu.P.* (Institute of Gravitation and Cosmology, Russian Peoples' Fri endship University, Moscow, Russia) **Quantum-Hydrodynamical Accretion onto Miniholes**

16.00-16.20h Coffee Break

16.20-16.40 *Ivashchuk V. D., Melnikov V. N.* (Center for Gravitation and Fundamental Metrology, VNIIMS; Institute of Gravitation and Cosmology, Peoples' Friendship University of Russia, Moscow, Russia) **On quantum billiards in multidimensional models**

16.40-17.00 *Bronnikov K.A.* (Institute of gravitation and cosmology, Peoples' Friendship University of Russia, Moscow, Russia), *Krechet V.G.* (Yaroslavl State University, Yaroslavl, Russia), *Jos_e P. S. Lemos* (Instituto Superior Tecnico, Lisboa, Portugal) **Rotating cylindrical wormholes and energy conditions**

17.00-17.20 *Portnov Ju.A.* (Moscow State University of Printing Arts, Moscow, Russia) **Rotation of galaxy disk without dark matter in Seven-Dimensional Space-Time**

17.20-17.40 *Larchenkova T.I.* (Astro Space Center Lebedev Physical Institute of RAS, Moscow, Russia). **Gravitational lensing of relativistic jets**

17.40-18.00 *Grobov A.V., Rubin S. G.* (National Research Nuclear University "MEPhI", Moscow, Russia) **Baryon assymetry as a result of symmetrization of extra dimensions**

18.00h Close of the Tuesday Session of Lectures

Wednesday 3rd July 2013. Conference Hall. Conference Hall. Study Laboratory Building

Chair: Sergey Levin (Moscow Institute for expertise and tests, Russia)

9.00-9.30 *Sami M.* (Kobayashi-Maskawa Institute for the Origin of Particles and the Universe, Nagoya University, Nagoya, Japan; Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, India); *Shahalam M.* (Centre for Theoretical Physics, Jamia Millia Islamia, New Delhi, India); *Skugoreva M.* (Institute of Gravitation and Cosmology, Peoples Friendship University of Russia, Moscow, Russia); *Toporensky A.* (Sternberg Astronomical Institute, Moscow, Russia). **Cosmological dynamics of non-minimally coupled scalar field system and its late time cosmic relevance**

9.30-10.00 *Polishchuk R.F.* (Lebedev Physics Institute of the Russian Academy of Sciences, Moscow, Russia) **Conservation Laws in the Einstein-Cartan Theory**

10.00-10.30 *Frolov B.N., Febres E.V.* (Moscow Pedagogical State University, Faculty of Physics and Informational Technologies, Moscow, Russia) **Spherically symmetric solution of gravitation theory with Deser–Dirac scalar field in Riemann–Weyl space**

10.30-11.00 Coffee Break

11.00-11.30 *Antonyuk P. N.* (Bauman Moscow State Technical University, Moscow, Russia) **Maxwell equation as a consequence of local conservation laws**

11.30-12.00 *Shcherban' V.N.* (Moscow State Pedagogical University, Moscow, Russia) **Investigation of plane waves in Poincare gauge theory of gravity**

12.00-12.30 *Shestakova T.P.* (Department of Theoretical and Computational Physics, Southern Federal University, Rostov-on-Don, Russia) **The BRST charge as a generator of gauge transformation in the theory of gravity**

12.30-13.00 *Zebrev Gennady* (Department of Micro- and Nanoelectronics, National Research Nuclear University, Moscow, Russia) **Phase Representation for (2+1)D Relativity in Gapped Graphene**

13.00-14.00h Lunch Break

Chair: Sergey Siparov (State University of Civil Aviation, St-Petersburg, Russia).

14.00-14.20 *Levin S.F.* (Moscow Institute for expertise and tests, cathedra of metrology and metrological support, Moscow, Russia) **Photometric scale of cosmological distance: Anisotropy and nonlinearity, isotropy and zero-point**

14.20-14.40 *Vargashkin V.Ya.* (Department of Physics, State University – Educational Scientific and Industrial Center, Orel, Russia). **Statistical method of anisotropy estimation of distribution of Hubble's parameter of celestial sphere according to astro- and photometry of quasars data**

14.40-15.00 *Litvinov D.A.* (Sternberg Astronomical Institute, Moscow, Russia), *Kauts V.L.* (Astro Space Center of Lebedev Physical Institute, Moscow; Department of Physics, Bauman Moscow State Technical University, Moscow, Russia), *Kulagin V.V., Rudenko V.N.* (Institute for Nuclear Research of the RAS, Moscow, Sternberg Astronomical Institute, Lomonosov Moscow state university, Russia) **Measuring the gravitational redshift effect with space-borne atomic clocks**

- 15.00-15.20** *Dumin Yurii V.* (Sternberg Astronomical Institute, Moscow State University; Space Research Institute, Russian Academy of Sciences, Moscow, Russia) **Lambda-instability of Keplerian orbits and its observable manifestations**
- 15.20-15.40** *Avramenko A.E.* (Pushchino Radioastronomy Observatory, Pushchino, Russia) **The relativistic models in the astrometric observations of periodic pulsar radiation**
- 15.40-16.00** **Coffee Break**
- 16.00-16.20** *Zaripov R.G.* (Kazan Science Center, Institute of Mechanics & Machinery, Russian Academy of Sciences, Kazan, Russia) **Redshift for a weak gravitational field in finsler space of events Berwald-Moore**
- 16.20-16.40** *Koryukin Valery* (Department of Physics and Mathematics, Mari State University, Yoshkar-Ola, Russia) **Two subsystems of the Universe matter and “black holes”**
- 16.40-17.00** *Kassandrov Vladimir V., Khasanov Ildus Sh.* (Institute of gravitation and cosmology, Peoples’ Friendship University of Russia, Moscow, Russia) **“One-electron Universe” conjecture of Wheeler-Feynman and Newtonian-like dynamics of identical particles on a unique worldline**
- 17.00-17.20** *Rylov Yu.A.* (Institute for Problems in Mechanics of RAS, Moscow, Russia) **Termination of the physics relativization and logical reloading in the space-time geometry**
- 17.20-17.40** *Zhotikov V.G.* (Moscow Institute for Physics and Technology, Dolgoprudny, Russia) **Principle of general relativity in Finsler geometry and in its generalizations**
- 17.40-18.00** To be announced
- 18.00h** **Close of the Wednesday Session of Lectures**

Thursday 4th July 2013. Conference Hall. Conference Hall. Study Laboratory Building

Chair: **Vladimir Vargashkin** (State University – Educational Scientific and Industrial Center, Orel, Russia)

- 9.00-9.30** *Kiktenko E.O., Korotaev S.M.* (Goelectromagnetic Research Centre of Schmidt Institute of Physics of the Earth, Moscow; Department of Physics, Bauman Moscow State Technical University, Moscow, Russia) **Causality in quantum teleportation**
- 9.30-10.00** *S.M. Korotaev^{1,2}, N.M. Budnev³, V.O. Serdyuk¹, J.V. Gorohov⁴, E.O. Kiktenko^{1,2}, V.L. Zurbanov³, R.R. Mirgazov³, V.B. Buzin⁴, A.N. Novysh¹* (¹Goelectromagnetic Research Centre of Schmidt Institute of Physics of the Earth, Russian Academy of Sciences, ²Bauman Moscow State Technical University, Physics Department, ³Institute of Applied Physics of Irkutsk State University, ⁴Pushkov Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation, Russian Academy of Sciences, Russia) **Preliminary results of the Baikal experiment on observations of macroscopic nonlocal correlation in reverse time**
- 10.00-10.30** *Koganov Alexandr* (Scientific Research Institute of System Analysis of RAS, Moscow, Russia) **Linking the quantum nonlocal property with Relativity theory**
- 10.30-11.00** **Coffee Break**

- 11.00-11.30** *Krugly Alexey L.* (Scientific Research Institute for System Analysis of the Russian Academy of Science, Moscow, Russia) **The action in a causal set approach to quantum gravity**
- 11.30-12.00** *Urasov N.I.* (Department of Physics, Bauman Moscow State Technical University, Moscow, Russia) **Non local electrodynamics and relativistic invariants**
- 12.00-12.30** *Arinchin Sergey* (Siberian Federal University, Krasnoyarsk, Russia) **The Entropy Time (A System Approach)**
- 12.30-13.00** *Aminova A.V., Lyulinskiy M.Kh.* (Department of Relativity Theory and Gravity, Kazan Federal University, Kazan, Russia) **On Schwarzschild superspace**
- 13.00-14.00h Lunch Break**
- Chair: Peter Rowlands (University of Liverpool, UK).**
- 14.00-14.20** *Petrov A.N.* (Sternberg Astronomical institute, Lomonosov Moscow State University, Moscow, Russia) **A New Family of Conserved Quantities for Perturbations in Metric Theories of Gravity**
- 14.20-14.40** *Dorofeev V.U.* (A.A.Friedmann Laboratory for Theoretical Physics, Saint-Petersburg State Electrotechnical University, Saint-Petersburg, Russia) **Application of methods of nonassociative algebra in the gravitation theory**
- 14.40-15.00** *Shatskiy A.A., Novikov I.D.* (Astro Space Center Lebedev Physical Institute of RAS, Moscow, Russia), *Tretyakova D.A., Alexeyev S.O.* (Sternberg Astronomical Institute, Lomonosov Moscow State University, Moscow, Russia). **Non-singular Brans-Dicke cosmology**
- 15.00-15.20** *Kauts V.L.* (Astro Space Center of Lebedev Physical Institute, Moscow; Department of Physics, Bauman Moscow State Technical University, Moscow, Russia). **Positronium for astrophysical conditions**
- 15.20-15.40** *Verma M.M.* (Department of Physics, Lucknow University, Lucknow, India) **Alternative spacetime geometries**
- 15.40-16.00 Coffee Break**
- 16.00-16.20** *Tomilin K.A.* (Institute for history of science and technology of RAS, Moscow, Russia) **Lorentz transformation: discovery and interpretations.**
- 16.20-16.40** *Mizin S.V.* (Lebedev Physical Institute, Moscow, Russia) **Field Theory substitutes Relativistic Theory**
- 16.40-17.00** *Isaeva Elmira* (Institute of Physics of Azerbaijan Academy of Sciences, Baku, Azerbaijan) **An observer and his consciousness in different worlds: philosophical aspects of the Relativity theory and quantum mechanics**
- 17.00-17.20** *Zhuravlev V.M.* (Department of theoretical physics, Ulyanovsk state university, Ulyanovsk, Russia) **Gravitation and geometry. A new approach**
- 17.20-17.40** *Chernitskii A.A.* (Saint Petersburg State University of Engineering and Economics; A.Friedmann Laboratory for Theoretical Physics, St.-Petersburg, Russia) **On the question of limit for signal velocity**
- 17.40-18.00** *Konstantinov M.Yu.* (Department of Physics, Bauman Moscow State Technical University, Moscow, Russia) **On the Metric Structure of Space-Time**

POSTERS

Gorelik Vladimir S., Zherihina Larisa N., Petrova Mariia G., Ckhovrebov Andrey M. (P.N. Lebedev Physical Institute of the Russian Academy of Sciences, Moscow, Russia) **Gravitational wave detector based on photonic crystal**

Kudriavtcev Yu.S. (St-Petersburg, Russia). **Some elementary questions on consistency or inconsistency of the standard cosmological model**

Gorelik V.S. (Lebedev Physical Institute, Moscow, Russia) **About observation of dark matter elemental particles in microwave region**

Gorelik V.S. (Lebedev Physical Institute, Moscow, Russia) **Quasirelativistic mechanics of quasiparticles with positive or negative mass**

Margulis M.A. (Bauman Moscow State Technical University, Moscow, Russia) **To a question on nature of world ether**

Shestakov U.I. (Russian Research Center «Kuchatov Institute», Moscow, Russia). **The nature of gamma – ray bursts in scalar model of gravitation**

Antonyuk P. N. (Bauman Moscow State Technical University, Moscow, Russia) **Lorentz transformations and the Euler identity for the four squares**

Rylov Yu.A. (Institute for Problems in Mechanics of RAS, Moscow, Russia) **Inadequacy of the linear vector space formalism at metric approach to geometry**

Meierovich B.E. (P.L.Kapitza institute for physical problems of Russian Academy of Sciences, Moscow, Russia) **Theory of galaxy rotation curves**