



**Program  
of the VIII-th International Meeting  
“Finsler Extensions of Relativity Theory”**

**25.06.2012 - 01.07.2012**, Moscow – Fryazino, Russia

**BAUMAN MOSCOW STATE TECHNICAL UNIVERSITY,  
RESEARCH INSTITUTE OF HYPERCOMPLEX SYSTEMS IN GEOMETRY AND  
PHYSICS**

**Monday June 25<sup>th</sup>, 2012, Hall of the Academic Council, main building, Bauman University  
Moscow, Baumanskaja street no. 2.**

**08:30 – 09:30**                      **Registration of participants**

**09:30 – 10:30**                    **Opening of the conference**

**Chair: Francaviglia Mauro**  
(*Università di Torino, Italy*)

**10:30 – 11:15**                **Pavlov Dmitriy**  
[geom2004@mail.ru](mailto:geom2004@mail.ru) (*Research Institute for Hypercomplex Systems in Geometry and Physics, Fryazino, Russia*)  
Hyperbolic field: basic properties and perspectives of use in applications.

**11:15 – 12:00**                **Kokarev Sergei**  
[logos-center@mail.ru](mailto:logos-center@mail.ru) (*Research Institute for Hypercomplex Systems in Geometry and Physics, Fryazino, Russia*)  
Elements of the theory of functions of a poly-number variable.

**12:00 – 12:45**                **Panchelyuga Victor, Panchelyuga Maria**  
[panvic333@list.ru](mailto:panvic333@list.ru) (*Research Institute for Hypercomplex Systems in Geometry and Physics, Fryazino, Russia; Institute of theoretical and experimental biophysics, Puschino, Moscow region, Russia*)  
Explorative researches on space-time effects of hyperbolic fields

**12:45 – 14:00**                **Collective photo, lunch**

**Chair: Brandt Howard** (*U.S. Army Research Laboratory, USA*)

**14:00 – 14:45**                **Shnoll Simon**  
[shnoll@mail.ru](mailto:shnoll@mail.ru), (*Institute of Theoretical and Experimental Biophysics, Puschino, Russia*)  
Cosmophysical factors in aleatory processes

**14:45 – 15:30**                **Francaviglia Mauro.**  
[mauro.francaviglia@unito.it](mailto:mauro.francaviglia@unito.it) (*Università di Torino, Italy*):  
Dark matter and mass generation from curvature effects in Palatini theories of nonlinear gravity

**15:30 – 16:15**                **Bogoslovski Georgi**  
[bogoslov@theory.sinp.msu.ru](mailto:bogoslov@theory.sinp.msu.ru) (*Research Institute for Hypercomplex Systems in Geometry and Physics, Fryazino, Moscow region, Russia; Skobeltsyn Nuclear Physics Institute of Lomonosov Moscow State University, Moscow, Russia*)

Inversion of the preferred direction and the corresponding changes in the group of isometries of the axially symmetric Finslerian space-time.

**16:15 – 16:45**      **coffee break**

**16:45 – 17:30**      **Garas'ko Grygoriy**  
[gri9z@mail.ru](mailto:gri9z@mail.ru) (*Research Institute Hypercomplex Systems in Geometry and Physics*)  
Staircase representation of nondegenerate polynumbers

**17:30 – 18:15**      **Balan Vladimir**  
[vbalan@mathem.pub.ro](mailto:vbalan@mathem.pub.ro), [vladimir.balan@upb.ro](mailto:vladimir.balan@upb.ro) (*University Politehnica of Bucharest, Faculty of Applied Sciences, Department of Mathematics I, Bucharest, Romania*)  
Spectral theory and generalized convexity advances in the m-root framework.

**18:15 – 19:00**      **Bulyzhenkov Igor**  
[ibw@sci.lebedev.ru](mailto:ibw@sci.lebedev.ru) (*Moscow Institute of Physics and Technology, Moscow reg., Russia; P.N. Lebedev Physical Institute, Moscow, Russia*)  
Internal energy changes can vary GR geodesic curves.

## **Tuesday, 26 June 2012, Conference hall "ISTOK"**

### **Fryazino, Moscow Region**

**Chair: Siparov Sergey**  
(*Research Institute Hypercomplex Systems in Geometry and Physics, Fryazino, Moscow region; State University of Civil Aviation, Department of Physics, St-Petersburg, Russia*)

**10:00 – 10:40**      **Vladimirov Yuriy**  
[yusvlad@rambler.ru](mailto:yusvlad@rambler.ru) (*Research Institute of Hypercomplex Systems in Geometry and Physics, Fryazino, Moscow region, Russia; Lomonosov Moscow State University, Moscow, Russia*)  
Binary geometrophysics and Finsler geometry.

**10:40 – 11:20**      **Brandt Howard**  
[howard.e.brandt.civ@mail.mil](mailto:howard.e.brandt.civ@mail.mil) (*U.S. Army Research Laboratory, USA*)  
Differential geometry of Finsler-spacetime tangent bundle.

**11:20 – 12:00**      **Zhotikov Vadim**  
[zhotikov@yandex.ru](mailto:zhotikov@yandex.ru) (*Moscow Institute for Physics and Technology (National Research University), Dolgoprudny, Moscow region, Russia*)  
On the geometric interpretation of the gauge invariance principle.

**12:00 – 12:30**      **Coffee break**

**12:30 – 13:10**      **Munteanu Gheorghe**  
[gh.munteanu@unitbv.ro](mailto:gh.munteanu@unitbv.ro) (*"Transilvania" University, Brasov, Romania*)  
New candidates for a Hermitian approach of Gravity.

**13:10 – 13:50**      **Siparov Sergey**  
[sergey@siparov.ru](mailto:sergey@siparov.ru) (*Research Institute Hypercomplex Systems in Geometry and Physics, Fryazino, Moscow region; State University of Civil Aviation, Department of Physics, St-Petersburg, Russia*)  
First principles and experimental basis of equivalence theory (of anisotropic geometrodynamics).

**13:50 - 15:00**      **Lunch**

**Chair: Munteanu Gheorghe**  
(*"Transilvania" University, Brasov, Romania*)

**15:00 – 15:45**      **Mornev Oleg**  
[mornev@mail.ru](mailto:mornev@mail.ru), (*Research Institute for Hypercomplex Systems in Geometry and Physics, Fryazino, Russia; Institute of theoretical and experimental biophysics, Puschino, Moscow region, Russia*)  
Double numbers in the setting of higher dimensions.

**15:45 – 16:30**            **Atanasiu Gheorghe**  
[gh\\_atanasiu@yahoo.com](mailto:gh_atanasiu@yahoo.com) (*“Transilvania” University, Brasov, Romania*)  
The influence of velocity, acceleration and momentum on an (x)-internal flag.

**16:30 – 17:00**            **Solov'yov Anton V**  
[a.v.solovyov@gmail.com](mailto:a.v.solovyov@gmail.com) (*Faculty of Physics, M.V. Lomonosov Moscow State University, Russia*)  
On volume elements in pseudo-Finsler spaces with Shimada-type metrics.

**17:00 – 17:30**            **coffee break**

**17:30 – 18:10**            **Neagu Mircea, Atanasiu Gheorghe**  
[mircea.neagu@unitbv.ro](mailto:mircea.neagu@unitbv.ro), [gh\\_atanasiu@yahoo.com](mailto:gh_atanasiu@yahoo.com)  
(*“Transilvania” University of Brasov, Faculty of Mathematics and Informatics*)  
Dual jet geometrization for the conformally deformed Berwald-Moór quartic metric.

**18:10 – 18:30**            **Munteanu Gheorghe** (lecturer), Academician **Radu Miron** (author)  
(*“Transilvania” University, Brasov, Romania*)  
On Finslerian mechanical systems.

**18:30 – 18:50**            **Ebtsam Hassan Taha**  
[ebtsam.h.taha@hotmail.com](mailto:ebtsam.h.taha@hotmail.com) (*Faculty of Science, Cairo University, Egypt*)  
Finslerized parallelizable spaces.

**Wednesday, 27 June 2012, Conference hall "ISTOK"**

**Fryazino, Moscow Region, Komsomolskaja st., 17**

**Chair: Rowlands Peter**  
(*Physics Department, University of Liverpool, UK*)

**10:00 – 10:40**            **Galaev Sergey**  
[sgalaev@mail.ru](mailto:sgalaev@mail.ru) (*Chernyshevski State University, Saratov, Russia*)  
Contact metric structures of Finsler type.

**10:40 – 11:20**            **Darvas György**  
[darvasg@iif.hu](mailto:darvasg@iif.hu) (*Symmetrion, Budapest, Hungary*)  
Application of the isotopic field-charge assumption to the electromagnetic interaction.

**11:20 – 12:00**            **Bucusheva Aliay**  
[bucusheva@list.ru](mailto:bucusheva@list.ru) (*Chernyshevski State University, Saratov, Russia*)  
About foliations on distributions with Finsler metric.

**12:00 – 12:30**            **coffee break**

**12:30 – 13:10**            **Aldea Nicoleta**  
[nicoleta.aldea@lycos.com](mailto:nicoleta.aldea@lycos.com) (*“Transilvania” University, Brasov, Romania*)  
A survey of complex Douglas spaces.

**13:10 – 13:50**            **Fil'chenkov Mikhail, Laptev Yuri**  
[fmichael@mail.ru](mailto:fmichael@mail.ru), [yplaptev@rambler.ru](mailto:yplaptev@rambler.ru) (*Institute of Gravitation and Cosmology, Peoples' Friendship University of Russia, Moscow, Russia; Bauman Moscow State Technical University, Moscow, Russia*)  
Ultra-rapid movements through the Galaxy due to the anisotropic deformation of space-time.

**13:50 – 15:00**            **Lunch**

**Chair: Balan Vladimir**  
(*University Politehnica of Bucharest, Faculty of Applied Sciences, Department of Mathematics I, Bucharest, Romania*).

**15:00 – 15:40**            **Eliovich Aleksander**

[eliovich@mail.ru](mailto:eliovich@mail.ru) (*Peoples' Friendship University of Russia, Moscow, Russia*)

Some aspects of the application of algebra to physics.

**15:40 – 16:20**            **Rowlands Peter**

*(Physics Department, University of Liverpool, UK)*

The null Berwald-Moor metric and the nilpotent wavefunction.

**16:20– 17:00**            **Perevozchikov Nikolay**

[n125252p@rambler.ru](mailto:n125252p@rambler.ru) (*Moscow Institute for Physics and Technology (National Research University), Dolgoprudny, Moscow region, Russia*)

Recording of a high-energy radiation from the region of an electric discharge in a water flow.

**17:00 – 17:30**            **coffee break**

**17:30 – 18:10**            **Gal'mak Aleksandr**

[halm54@mail.ru](mailto:halm54@mail.ru) (*Mogilyov State University of Food Science, Mogilyov, Belarus*)

Polyadic operations on the set of spatial matrices.

**18:10 – 18:50**            **Redkov Viktor, Kisil Vladimir, Ovsiuk Evgeny**

[redkov@dragon.bas-net.by](mailto:redkov@dragon.bas-net.by) (*Stepanov Physics Institute of the National Academy of Sciences, Minsk, Belarus*)

The Lorentz group – the foundation of the description of interactions of bosons and fermions with the pseudo-Riemannian structure of space-time.

**Thursday, 28 June 2012**

**Excursion across Moscow region.**

The Holy Trinity-St. Sergius Lavra,

FEDERAL STATE CULTURAL ESTABLISHMENT

"ABRAMTSEVO STATE HISTORICAL, ARTISTIC AND LITERARY MUSEUM-RESERVE"

CLUB GALERY – BANQUET

**Friday, 29 June 2012, Conference hall "ISTOK"**

**Chair: Voicu Nicoleta,** *"Transilvania" University, Brasov, Romania*

**10:00 – 10:40**            **Levin Sergey**

[info@rostest.ru](mailto:info@rostest.ru), [antoninaEL@rostest.ru](mailto:antoninaEL@rostest.ru) (*Moscow Institute for Expertise and Tests, Moscow, Russia*)

Cosmological redshift: distance scale, isotropy and nonlinearity.

**10:40 – 11:20** **Glazunov Nikolai**

[glanm@yahoo.com](mailto:glanm@yahoo.com) (*National Aviation University, Kiev, Ukraine*)

On Finsler geometries with symmetric metric functions and anisotropic groups.

**11:20 – 12:00**            **Lupu Gheorghe Adrian**

[adilupucv@yahoo.fr](mailto:adilupucv@yahoo.fr) (*Technical High School, Decebal, Romania*)

About viable Einstein models.

**12:00 – 12:30**            **coffee break**

**12:30 – 13:10**            **Turbin Anatoli, Zhdanova Yuliya**

[turbin@imath.kiev.ua](mailto:turbin@imath.kiev.ua), [yuzhdanova@yandex.ru](mailto:yuzhdanova@yandex.ru) (*Institute of Mathematics of the National Academy of Sciences of Ukraine, Kiev, Ukraine; State University of Information and Communication Technologies, Kiev*)

Fields of hypercomplex numbers.

**13:10 – 13:50**            **Voicu Nicoleta**

[nico.brinzei@unitbv.ro](mailto:nico.brinzei@unitbv.ro) (*"Transilvania" University, Brasov, Romania*)

Harmonic and biharmonic mappings of real Finsler spaces.

13:50 – 15:00 Lunch

**Chair: Mornev Oleg**

*(Research Institute for Hypercomplex Systems in Geometry and Physics, Fryazino, Russia; Institute of Theoretical and Experimental Biophysics, Puschino, Moscow region, Russia)*

**15:00 – 15:40 Petouchov Sergey, Svirin Vitaly, Stepanyan Ivan**  
[spetoukhov@gmail.com](mailto:spetoukhov@gmail.com), [vitaly.i.svirin@gmail.com](mailto:vitaly.i.svirin@gmail.com), [neurocomp.pro@gmail.com](mailto:neurocomp.pro@gmail.com) *(Institute of Machine Science "A.A. Blagonravov" of the RAS, Moscow, Russia)*

Matrix genetics, hypercomplex numbers and the rule of long genetic sequences.

**15:40 – 16:20 Petouchov Sergey, Koblyakov Aleksandr, Stepanyan Ivan**  
[spetoukhov@gmail.com](mailto:spetoukhov@gmail.com), [akoblyakov@list.ru](mailto:akoblyakov@list.ru), [neurocomp.pro@gmail.com](mailto:neurocomp.pro@gmail.com) *(Institute of Machine Science "A.A. Blagonravov" of the RAS, Moscow; P. I. Tchaikovsky Conservatory, Moscow, Russia)*

Extensions of double numbers, Fibonacci-scale musical constructions and problems of musical creation.

**16:20 – 17:00 Redkov Viktor, Kisil Vladimir, Ovsiuk Evgeny**  
[redkov@dragon.bas-net.by](mailto:redkov@dragon.bas-net.by) *(Stepanov Physics Institute of the National Academy of Sciences, Minsk, Belarus)*

Is it possible a Finsler geometrization of polarized optics? (Stokes-Muller and Jones' approaches).

17:00 – 17:30 coffee break

**17:30 – 18:10 Perminov Nikolay**  
[nikolai-kazan@rambler.ru](mailto:nikolai-kazan@rambler.ru) *(Department of General Relativity and Gravitation, Faculty of Physics, Kazan (Volga) State University, Russia)*

18:10 – 18:50

### Saturday, 30 June, , Conference hall "ISTOK"

**Chair: Eliovich Aleksandr**

*(Peoples' Friendship University of Russia, Moscow, Russia)*

**10:00 – 10:40 Fedorov Aleksey, Yurchenko Stanislav**  
[lex1026@gmail.com](mailto:lex1026@gmail.com), [st.yurchenko@mail.ru](mailto:st.yurchenko@mail.ru) *(Bauman Moscow State Technical University, Russia)*

Quaternions and spin tomography.

**10:40 – 11:20 Khanukaev Yuriy, Kurakin Vjacheslav**  
[khan.yuri@gmail.com](mailto:khan.yuri@gmail.com), [vkurakin@hotmail.ru](mailto:vkurakin@hotmail.ru) *(Moscow Institute of Physics and Technology, Russia)*

About metric on the field of quaternions.

**11:20 – 12:00 Koryukin Valeriy**  
[kvm@marsu.ru](mailto:kvm@marsu.ru) *(Mari State University, Mathematical Analysis and Function Theory Department, Mari-Al, Russia)*

Neutrino of the Universe and quantum gravity theory.

12:00 – 12:30 coffee break

**12:30 – 13:10 Kuzub Natalia**  
[knm1@mail.ru](mailto:knm1@mail.ru) *(Education Academy of East Siberia, Irkutsk, Russia)*

On the identity of alternativeness of a Cayley algebra.

**13:10 – 13:50 Grushevskaja Galina**  
[grushevskaja@bsu.by](mailto:grushevskaja@bsu.by) *(Belarussian State University, Minsk, Belarus)*

The Finsler geometry induced by surface phenomena on interphase boundary with amphiphilic molecular layer.

13:50 – 15:00 Lunch

**Chair: Panchelyuga Victor**

*(Research Institute Hypercomplex Systems in Geometry and Physics, Fryazino, Russia; Institute of theoretical and experimental biophysics, Puschino, Moscow region, Russia)*

**15:00 – 15:40**                      **Krylova Nina**

[nina-kr@tut.by](mailto:nina-kr@tut.by) (*Belarussian State University, Minsk, Belarus*)

Jet theoretical Yang-Mills energy in the geometric dynamics of 2D-LB-monolayer.

**15:40 – 16:20**                      **Lapshin Alexander**

[lavexander@mail.ru](mailto:lavexander@mail.ru) (*Peoples' Friendship University of Russia, Moscow, Russia*)

N-ary operations on the set of spatial matrices. The case N-3, as the object of a more detailed study.

**16:20 – 17:00**                      **Egorov Evgeniy**

[omsert@mail.ru](mailto:omsert@mail.ru)

Change of the fundamental properties of substances under the conditions of local variations of the vector potential of the electromagnetic field.

**Sunday, July 1<sup>st</sup>, 2012, Experimental base of the Research Institute for Hypercomplex Systems in Geometry and Physics “Lesnoe Ozero”,**

**Moscow Region, Litvinovo**

**10:30 – 13 :00**                      **Round table devoted to the results of the Conference**

**13:00 - 14:00**                      **Closure of the meeting.**