

PERM STATE UNIVERSITY
RUSSIAN GRAVITATIONAL SOCIETY
INSTITUTE OF CONTINUUM MECHANICS
RUSSIAN FOUNDATION OF BASIC RESEARCH

**FRIEDMAN READINGS – INTERNATIONAL
SCIENTIFIC CONFERENCE**

Russia, Perm, PSU, 24-28 June 2013

PROGRAM

Perm-2013

Organizing Committee of the conference

Co-chairmen: Prof. V.N. Melnikov, President of Russian Gravitational Society (VNIIMS, Moscow; RGS) and Prof. V.V. Malanin, President of PSU (Perm).

Deputy Chairman: Prof. V.F. Panov (PSU, Perm).

Members: Academicians of RAS A.A. Starobinsky (Moscow) and V.P. Matveenko (Perm); Profs. Sadanand Pandey (India), M. Abishev (Kazakhstan), K.A. Bronnikov (Moscow), Yu. S. Vladimirov (Moscow), D. V. Gal'tsov (Moscow), A.A. Grib (St.Petersburg), A.I. Zhuk (Odessa, Ukraine), yu. G. Ignatyev (Kazan), N.A. Kalinin (Perm), V.G. Krechet (Yaroslavl), E.V. Kuvshinova (perm), V.N. Lukash (Moscow), A.V. Minkevich (Minsk, Belarus'), V.M. Mostepanenko (St. Petersburg), V. I. Noskov (Perm), V. N. Pavelkin (Perm), I.E. Poloskov (Perm), yu. P. Rybakov (Moscow), O.V. Sandakova (Perm), S.V. Sushkov (Kazan), P.G. Frik (Perm), B.N. Frolov (Moscow), S.V. Chervon (Ulyanovsk), A.P. Shkaraputa (Perm).

The chairmen of sections:

- 1. Problems of cosmology and astrophysics** - Academicians of RAS A.A. Starobinsky, Prof. A.A. Grib
- 2. Modern problems of classical and quantum gravity** – Prof. V.N. Melnikov, Prof. yu. S. Vladimirov
- 3. Dynamics of complex systems** – Prof. P.G. Frik, Prof. I.E. Poloskov

Opening and plenary session on 24 June 2013 will be held in the Student Club PGU, in the assembly hall (Building 7).

Registration will take places at:

24 June 2013 from 12:00 pm Noon to 02:00 pm – assembly hall (Building 7)

**24 June 2013 from 02:30 pm to closing ceremony – audience 420 (Building 2)
– Department of Fundamental Mathematics**

Plenary sessions

24 June, Monday

Plenary session will be held in the Student Club PGU, in the assembly hall

The chairmen of sections: Prof. V.N. Melnikov

14-00—14-30	Opening of the conference Welcoming address by the Rector of Perm State National Research University professor I.Yu.Makarihin Welcoming address by the President of the Russian Gravitational Society Professor V.N.Melnikov
14.30-15.10	V. F. Panov, V. I. Yakovlev A.A. Friedman in Perm
15.10-15.50	Starobinsky Alexei A. Present status of inflationary models
15.50-16.30	V.M. Mostepanenko Experimental constraints on corrections to Newtonian gravity
17.00-17.30	Coffee-break

25 June, Tuesday

Plenary session will be held in the audience 202, 8 Building

The chairmen of sections: Academicians of RAS A.A. Starobinsky

9.30-10.10	V.N. Melnikov Multidimensional Models, Dark Energy, Fundamental Constants and Expected New SI Units
10.10-10.50	R.F. Polistchuk The solution of the gravitational energy
10.50-11.30	Coffee-break
11.30-12.10	V.M. Zharkov Gravity, black holes, and the mechanisms of high-temperature superconductivity
12.10-12.50	S.V. Sushkov Cosmological models with non-minimal kinetic coupling
12.50-13.20	Photography
13.20-15.00	Luhch
15.00-19.00	Breakout sessions

26 June, Wednesday

Plenary session will be held in the audience 202, 8 Building

The chairmen of sections: Prof. Yu.S. Vladimirov

9.30-10.10	A.A. Grib, Yu. V. Pavlov Black holes as particle supercollider
10.10-10.50	Yu.S. Vladimirov Relational-statistical theory of space-time and cosmology
10.50-11.30	I.A.Babushkin, G.P.Bogatyrev, A.A.Bashko, Yu.K.Bratuhin, Yu.P.Gertsen, A.F.Gluhov, E.A.Zilberman, A.V.Zyuzgin, G. F.Putin, A.S.Ageev, K.V.Vyatkin, A.Yu.Penyagin, D.V.Poroshin, AI Ivanov, M.Yu.Belyaev, M.M.Maksimova, VI Polezhaev V.M.Emelyanov, SA Nikitin, V.V.Sazonov, G.K.Kostarev Microgravity experiments on orbital spacecraft
11.30-12.00	Coffee-break
12.00-12.40	I.A. Eganova, W. Kallis Apriori relationship in the world of events
12.40-13.20	A. P. Levich Simulation of space-time and arithmetization measurable intensities for AA Friedman
13.20-15.00	Lunch
15.00-19.00	Breakout sessions
19.00	Banquet

27 June, Thursday

Excursion day

28 June, Friday

Plenary session will be held in the audience 202, 8 Building

The chairmen of sections: Prof. S.V. Sushkov

9.30-10.10	V.F.Panov, V.N.Pavelkin, E.V.Kuvshinova, O.V.Sandakova Cosmology with rotation
10.10-10.50	A.K. Guts The birth of the universe and the theory of historical sequences
10.50-11.30	E.G.Mychelkin Antiscalar approach to gravitation, cosmology and neutrino physics
11.30-12.10	OV Babourova, BN Frolov Necessary existence in nature geometrized scalar field Deser-Dirac: cosmological and astrophysical consequences
12.10-12.40	Break
12.40-14.00	Breakout sessions
14.00-15.00	Lunch
15.00	Breakout sessions

The section 1. Problems of cosmology and astrophysics

The audience 419, 2 Building.

25 June, Tuesday

The chairmen of sections: Prof. A.A. Grib

15.00-15.20	R.F.Polischuk Dark matter and dual symmetry
15.20-15.40	T.V.Kairov, V.V.Karbanovsky Static spherically symmetric solutions of Einstein's theory of post-gravity (PETG).
15.40-16.00	T.V.Kairov, V.V.Karbanovsky Non-static spherically symmetric solutions of the equations of general relativity.
16.00-16.20	A.M.Rasulova On the possibility of observing the Universe at last fall into a rotating black hole.
16.20-16.40	M.A.Skugoreva, A.V.Toporensky, Cosmological dynamics of non-minimally coupled scalar field system and its late time cosmic relevance
16.40-17.20	Coffee-break
17.20-17.40	V.M.Koryukin Chernikov's theory of gravity and the cosmological principle
17.40-18.00	A.A.Chaadaev, S.V.Chervon Hyperbolic cosmological solutions of a self-scalar field
18.00-18.20	A.V. Chupin, R.A.Stepanov, P.G. Frik, D.D.Sokolov, R.Beck Analysis and synthesis of the polarization data of the galaxy NGC 6946
18.20-18.40	A.V.Yaparova Application of the Abel equation for the analysis of cosmological inflation

26 June, Wednesday

The chairmen of sections: Prof. S.V. Sushkov

15.00-15.20	E.G.Mychelkin Features of the dark energy problem in antiscalar approach
15.20-15.40	V.Yu.Dorofeev The emission of gravitational waves ergosphere of a black hole
15.40-16.00	A.V.Aminova, P.I.Chumarov Exact solutions with wormholes of the Einstein-Yang-Mills equations in the 6-dimensional Kaluza-Klein
16.00-16.20	I.A.Eganova, V.Kallis, V.N.Samoylov, V.I.Struminsky Mass (weight) of a complex system to a long-term observation of gravitational studies
16.20-16.40	I.A.Eganova, V.Kallis The properties and the possible consequences of a priori relationship in the world of events
16.40-17.20	Coffee-break

17.20-17.40	D.M.Yanishevsky Accelerated expansion of the universe filled with a perfect fluid with a quadratic equation of state
17.40-18.00	K.E.Beloushko, V.V.Karbanovsky The off-diagonal cosmological models of Friedmann - Robertson - Walker in the General Theory of Relativity
18.00-18.20	D.E.Burlankov Friedman's model - the dynamic space
19.00	Banquet

27 June, Thursday

Excursion day

28 June, Friday

The chairmen of sections: Prof. V.F. Panov

12.40-13.00	F.Sh.Zaripov Solving the problem of the cosmological constant in the theory of induced gravity. The evolution of the coupling constants
13.00-13.20	V.A. Popov Isotropic in the universes with Chaplygin gas related wormhole
13.20-13.40	D.E.Burlankov The expansion of the universe and gravity stars
13.40-14.00	V.D.Vertogradov Geodetic for particles with negative energy in the ergosphere, a rotating black hole
14.00-15.00	Lunch
15.00-15.20	O.V. Babourova, K.N. Lipkin, B.N. Frolov. Cosmological solutions for the early universe in the space of the Cartan-Weyl with a scalar field Deser-Dirac
15.20-15.40	B.N. Frolov, E.V. Febres. Spherically symmetric solution of the theory of gravity with a scalar field Deser-Dirac distribution in the space of Riemann-Weil
15.40-16.00	O.V. Babourova, B.N. Frolov, V.N. Scherban. The structure of plane waves of torsion in the space of Riemann-Cartan
16.00-16.20	P.D.Suharevsky On the way to the new cosmology
16.20-16.40	I.S.Nurgaliev The universe like a phoenix of Friedman

The section 2. Modern problems of classical and quantum gravity

The audience 324, 2 Building.

25 June, Tuesday

The chairmen of sections: Prof. Yu. S. Vladimirov

15.00-15.20	G.L.Klimchitskaya Constraints on Yukawa-type long-range interactions from recent measurements of the Casimir force
15.20-15.40	A.Pradhan Accelerating Dark Energy Models in Anisotropic Bianchi Type Space – Time
15.40-16.00	S.V.Bolohov About the Higgs sector in the Kaluza-Klein models
16.00-16.20	V.M.Koryukin On the quantum theory of gravity and "black holes"
16.20-16.40	A.A.Grib, V.Yu.Dorofeev The magnetic field of the planet-induced torsional
16.40-17.20	Coffee-break
17.20-17.40	V.I.Noskov Model of nested spaces: features dynamic investment and geometry
17.40-18.00	SV Sushkov, A.I. Egorov, P.E. Kashargin Scalar multi wormholes
18.00-18.20	Angsachon Tosaporn The light bending angle in R-spacetime
18.20-18.40	E.G. Mychelkin, V.L. Saveliev, M.A. Makukov The three possible states of gravitating background neutrinos bradyon, tachyon and the mixed

26 June, Wednesday

The chairmen of sections: Prof. R.F. Polishchuk

15.00-15.20	Yu.V.Pavlov Exact solutions and birth of the non-conformal scalar field in Friedmann cosmological models.
15.20-15.40	A.V.Toporensky Cosmological dynamics of non-minimally coupled scalar field
15.40-16.00	A.K. Guts The transition probabilities by changing the dimension of the space-time
16.00-16.20	A.A. Popov Effect of self-action in the wormhole spacetimes
16.20-16.40	A.V.Nikolaev The deviation of the beam of light in the weak field limit in $f(R)$ D-dimensional gravity
16.40-17.20	Coffee-break
17.20-17.40	V.N.Timofeev Newman-Penrose formalism for the spinor field

17.40-18.00	R.N.Kashapov Compton effect in the space of a cosmic string
18.00-18.20	A.E.Pavlov, V.N.Pervushin Quantum Universe
19.00	Banquet

27 June, Thursday

Excursion day

The section 3. Dinamics of complex systems

The audience 202, 8 Building.

25 June, Tuesday

The chairmen of sections: Prof. P.G. Frik

15.00-15.20	A.Pavlinov, S.Denisov, V.Noskov, R.Stepanov, P.Frik Experimental studies of the magnetic field in a turbulent flow of liquid sodium
15.20-15.40	E.L.Tarunin Eddy currents in Nature and Technology (computational experiments)
15.40-16.00	T.P.Lyubimova, D.V.Lyubimov, E.A.Kolchanova Termovibrational convection in a two-layer system heated from below layers of clear fluid and porous medium
16.00-16.20	M.V.Chirkov, S.V.Rusakov Using a Kalman filter for parameter identification of dynamical systems
16.20-16.40	S.S.Pechenova Deterministic and stochastic systems of differential equations with variable delay
16.40-17.20	Coffee-break
17.20-17.40	N.V.Kolchanov, G.F.Putin Wave patterns in a horizontal layer of magnetic colloids heated from below
17.40-18.00	K.E.Beloushko Numerical simulation of the interaction of the upper and lower atmosphere
18.00-18.20	A.N.Golubyatnikov, O.O.Ivanov Hydrodynamic modeling of gravity and melting a mixture of cosmological problems

26 June, Wednesday

The chairmen of sections: Prof. I.E. Poloskov

15.00-15.20	I.E.Poloskov Linear stochastic dynamic systems with delays and discrete-continuous disturbances
15.20-15.40	I.E.Poloskov Some stochastic problems of ecology and schemes of their solutions

15.40-16.00	I.I.Poloskov, I.E.Poloskov The use of parallel computing in the problems of stochastic viscous elastic mechanics
16.00-16.20	V.N. Ivanov An algorithm for the consideration of additional bonds in the mechanical systems on the basis of the modified Lagrange functions
16.20-16.40	N.A.Strelkova On the problem of optimal control docking of two solids
16.40-17.20	Coffee-break
17.20-17.40	K.N.Kurskaya, V.V.Malanin, E.N.Ostapenko, N.A.Repyah The dynamics of large orbital space systems (LOSS)
17.40-18.00	S.V.Lutmanov Positional compromise strategies in differential games of several persons
18.00-18.20	V.A.Shimanovsky, V.N. Ivanov On a form of the equations of motion of solids in the canonical variables
19.00	Banquet

27 June, Thursday

Excursion day

June 28, Friday

Closing ceremony

(after section reports)