

Institute for Nuclear Research
of the Russian Academy of Sciences

P.G. Demidov Yaroslavl State University

QUARKS-2012

17th International Seminar on High Energy Physics
Yaroslavl, Russia, June 4 — 10, 2012.

Preliminary program

Moscow, 2012

Monday, June 4

Afternoon: Registration

Plenary Session. 18:30

1. *Opening* — 20 min.
2. Lipatov L. (PNPI, St. Petersburg)
Effective action for the high energy scattering in gravity — 30 min.
3. Golubev V. (Budker Inst. of Nucl. Phys., Novosibirsk)
Physics potential and project status of the SuperB Factory — 30 min.
4. Shifman M. (U. of Minnesota)
Non-Abelian strings and 2D - 4D correspondence — 30 min.

Tuesday, June 5

Plenary Session. 10:00

1. Thomson G. (University of Utah)
Results from the Telescope Array Experiment — 30 min.
2. Bleve C. (Bergische Universitaet Wuppertal)
Results from the Pierre Auger Observatory — 30 min.
3. Spiering C. (DESY)
Fundamental physics with neutrino telescopes — 30 min.

Coffee Break. 11:30 – 11:50

4. Gushchin E. (INR, Moscow & CERN)
LHCb status and recent results — 30 min.
5. Starobinsky A. (Landau Inst., Moscow)
Light neutrino masses in cosmological models based on $f(R)$ gravity — 30 min.
6. Diakonov D. (PNPI, St. Petersburg)
Baryon resonances at large N_c , and prediction of new exotic baryons — 30 min.

Evening Sessions.

Parallel Section #1 (Hall #1). 15:00

1. Achasov N. (Sobolev IM, Novosibirsk)
Light scalars in semileptonic decays of heavy quarkonia — 30 min.
2. Petti R. (University of South Carolina)
(Anti)neutrino-nucleus DIS structure functions and cross-sections — 30 min.
3. Madigozhin D. (JINR, Dubna)
High precision measurement of the form factors of the charged kaon semileptonic decays $Kl3$ — 30 min.

4. Jenkovszky L. (Bogolyubov ITP, Kiev)
Unified description of lepton- and hadron-induced reactions — 30 min.

Coffee Break. 17:00 – 17:20

5. Ermolaev B. (Ioffe Phys-Tech Inst., St. Petersburg)
New approach to QCD factorization — 30 min.
6. Bakulev A. (JINR, Dubna)
Pion-photon transition form factor in the light of new Belle data — 30 min.
7. Kiselev A. (Sobolev IM, Novosibirsk)
Chiral dynamics in $\pi\pi$ scattering and light scalars — 30 min.

Parallel Section #2 (Hall #2). 15:00

1. Nesvizhevsky V. (Laue-Langevin Inst., Grenoble)
Gravitational quantum states of antihydrogen atoms as a tool for precision studies of gravitational properties of antimatter. — 30 min.
2. Kim V. (PNPI, St. Petersburg)
Dijet production and search for extra-dimension graviton at LHC energies — 30 min.
3. Sibiryakov S. (EPFL, Lausanne & INR, Moscow)
Emergent Lorentz invariance: the holographic description — 30 min.
4. D'Amico G. (New York U.)
Cosmology and perturbations in massive gravity — 30 min.

Coffee Break. 17:00 – 17:20

5. Koshelev A. (Vrije U., Brussel & Steklov Math. Inst., Moscow)
Non-singular bounce in nonlocal gravitational models — 30 min.
6. Osipov M. (INR, Moscow)
Bouncing cosmology from Galileon field — 20 min.

7. Satunin P. (Moscow State U. & INR, Moscow)
On calculation of cross sections in Lorentz-violating QED — 20 min.
8. Tokareva A. (Moscow State U. & INR, Moscow)
Reheating in Starobinski model with conformal Higgs field — 20 min.
9. Chirkov D. (Sternberg Astron. Inst., Moscow)
Oscillatory regime in multidimensional Gauss-Bonnet cosmology. — 20 min.
10. Skugoreva M. (Peoples Friendship U., Russia / Inst. of Gravitation and Cosmology)
Dynamical regimes in the model of the Universe with non-minimally coupled scalar field. — 20 min.

Parallel Section #3 (Hall #3). 15:00

1. Belavin A. (Landau Inst., Moscow)
Instantons and 2d superconformal field theory — 30 min.
2. Modesto L. (Perimeter Inst.)
[finite] (super-)renormalizable multidimensional quantum [super-]gravity — 30 min.
3. Ivanov E. (BLTP, JINR, Dubna)
Landau-type models with worldline $N = 4$ supersymmetry — 30 min.
4. Morozov A. (ITEP, Moscow)
Knot polynomials from representation theory — 30 min.

Coffee Break. 17:00 – 17:20

5. Konyushikhin M. (Nantes U. & ITEP, Moscow)
SQM with non-Abelian self-dual fields — 30 min.
6. Bykov D. (Nordita, Stockholm and Steklov Math. Inst., Moscow)
The geometry of Haldane limits — 30 min.
7. Zenkevich Y. (INR & ITEP, Moscow)
Duality between the Gaudin and spin chain systems from the AGT duality — 30 min.

8. Alberte L. (Munich U.)
*Semiclassical calculation of multiparticle cross sections
in classicalizing theories* — 30 min.
9. Levkovich-Maslyuk F. (Moscow State U. & ITEP)
Integrability for the spectrum of planar AdS/CFT — 30 min.

Wednesday, June 6

Morning Sessions.

Parallel Section #1. 10:00

1. Rebbi C. (Boston U.)
Simulation of graphene on the graphene lattice — 30 min.
2. Polikarpov M. (ITEP, Moscow)
Graphene as quantum field theory — 30 min.
3. Zubkov M. (ITEP, Moscow)
Momentum space topology in lattice gauge theory — 30 min.

Coffee Break. 11:30 – 11:50

4. Smilga A. (University of Nantes & ITEP)
Witten index in 3d supersymmetric Chern-Simons-Yang-Mills theory — 30 min.
5. Khmelnitsky A. (INR, Moscow & ASC LMU, Munich)
Black hole - Black string phase transition in flux compactifications — 30 min.

Parallel Section #2. 10:00

1. Dokuchaev V. (INR, Moscow)
Life inside black holes — 30 min.
2. Vikman A. (CERN)
G-bounce — 30 min.
3. Klimai P. (INR, Moscow)
Primordial black hole formation from non-Gaussian curvature perturbations — 30 min.

Coffee Break. 11:30 – 11:50

4. Rubakov V. (INR, Moscow)
Conformal mechanisms of generation of density perturbations — 30 min.
5. Ramazanov S. (Niels Bohr Institute, Copenhagen)
Primordial scalar perturbations via conformal mechanisms — 30 min.

Parallel Section #3. 10:00

1. Dedenko L. (Moscow State U.)
Chemical composition of the primary cosmic radiation observed at the Yakutsk array at energies above $3 \cdot 10^{17} eV$ — 30 min.
2. Troitsky S. (INR, Moscow)
Anisotropy of arrival directions of ultra-high-energy cosmic rays: current results and future questions. — 30 min.
3. Rubtsov G. (INR, Moscow)
Long-term gamma-ray sky variability at 1 GeV with Fermi-LAT data — 30 min.

Coffee Break. 11:30 – 11:50

4. Malyshev D. (KIPAC, Stanford & ITEP, Moscow)
Spectral component analysis of the Fermi-LAT gamma-ray bubbles — 30 min.
5. Kalashev O. (INR, Moscow)
Ultra high energy cosmic rays. Fitting spectrum and composition — 30 min.

Plenary Session at Yaroslavl Demidov State University. 15:30

1. Palombo F. (Dipartimento di Fisica dell'Universita' and INFN, Milan, Italy)
Searches for new physics in CP violation from BaBar — 30 min.
2. Kirsanov M. (INR, Moscow)
Higgs searches by CMS at LHC — 30 min.
3. Brummer F. (DESY, Hamburg)
Supersymmetry and the 125 GeV Higgs — 30 min.

Concert . 18:00

Thursday, June 7

Plenary Session. 10:00

1. Vladimirov M. (Lebedev Physics Inst., Moscow)
Latest results of the OPERA neutrino experiment — 30 min.
2. Shevchenko V. (NRC "Kurchatov Institute", Moscow)
Quantum measurements and chiral magnetic effect — 30 min.
3. Zakharov V. (ITEP, Moscow & MPI, Munich)
From stretched horizon to gluon-plasma observables — 30 min.

Coffee Break. 11:30 – 11:50

4. Arefeva I. (Steklov Math. Inst., Moscow)
Holographic description of quark-gluon plasma formation in heavy ion collisions — 30 min.
5. Porrati M. (New York U., CCPP)
Old and new no-go theorems for massless high spin particles — 30 min.
6. Blas D. (EPFL, Lausanne)
Breaking Lorentz invariance and cosmology — 30 min.

Evening Sessions.

Parallel Section #1. 15:00

1. Bakulev A. (JINR, Dubna)
Divergence of the pQCD asymptotic series for Bjorken sum rule and possible remedy — 30 min.
2. Faustov R. (Dorodnicyn Computing Centre, Moscow)
Spectroscopy and Regge trajectories of heavy quarkonia — 30 min.
3. Pivovarov A. (INR, Moscow)
Long-distance contributions to rare B-meson decays — 30 min.

4. Parkhomenko A. (Yaroslavl State U.)
Non-leading LCDAs of bottom baryons — 30 min.

Coffee Break. 17:00 – 17:20

5. Shestakov G. (Sobolev IM, Novosibirsk)
Line shape of $\psi(3770)$ in $e^+e^- \rightarrow D\bar{D}$ — 30 min.
6. Saleev V. (Samara State U.)
Charmonium production in the Regge limit of QCD and NRQCD approach: from Tevatron to LHC — 30 min.
7. Kozhevnikov A. (Sobolev IM, Novosibirsk)
The electromagnetic form factor of pion in the field-theory-inspired approach — 30 min.
8. Rusov A. (Yaroslavl State U.)
Structure of the B-Meson interpolating current from phenomenology — 30 min.

Parallel Section #2. 15:00

1. Sazhina O. (Sternberg Astron. Inst., Moscow)
Cosmic strings in the Universe. — 30 min.
2. Barvinsky A. (Lebedev Physics Inst., Moscow)
Nonlocal gravity, Schwinger-Keldysh technique, dark energy and all that. — 30 min.
3. Berezin V. (INR, Moscow)
More on classical analogs of quantum black holes — 30 min.
4. Toporensky A. (Sternberg Astron. Inst., Moscow)
Super-inflating solutions in $f(R)$ gravity — 30 min.

Coffee Break. 17:00 – 17:20

5. Bezrukov F. (IPT, Lausanne & INR, Moscow & LMU, Muenchen)
Standard Model and the Higgs mass – what can be learned about new physics? — 30 min.
6. Tretyakova D. (Sternberg Astron. Inst., Moscow)
Nonsingular Brans-Dicke- Lambda cosmology — 30 min.

7. Vernov S. (SINP, Moscow & ICE, Barcelona)
Cosmological solutions in nonlocal models — 30 min.
8. Saratov A. (INR, Moscow)
Phantom dark energy in scalar-tensor gravity — 20 min.
9. Arbuzova E. (Dubna U. & Novosibirisk State U.)
Particle production in modified gravity — 20 min.
10. Rannu K. (Sternberg Astron. Inst., Moscow)
Verification in higher order gravity in spherical symmetry case with PPN formalism. — 20 min.

Parallel Section #3. 15:00

1. Penin A. (Alberta U. & INR, Moscow)
Threshold production of unstable top — 30 min.
2. Kuznetsov M. (MIPT & INR, Moscow)
Fermions and decay of Kaluza-Klein vacuum — 30 min.
3. Pivovarov G. (INR, Moscow)
New perturbation theory for gauge theories — 30 min.
4. Reshetnyak A. (Inst. of Strength Phys. and Materials Science, Tomsk)
Gauge dependence of vacuum expectation values of gauge invariant operators from soft breaking of BRST symmetry. Example of Gribov-Zwanziger action. — 30 min.

Coffee Break. 17:00 – 17:20

5. Efimov G. (BLTP, JINR, Dubna)
Unstable oscillator and the tachyon field — 30 min.
6. Ovchinnikov A. (INR, Moscow)
On the universal relations for the formfactors in 1D quantum liquids — 30 min.

Conference Dinner. 20:00

Friday, June 8

Morning Sessions.

Parallel Section #1. 10:00

1. Nesterov D. (Lebedev Physics Inst., Moscow)
Functional determinants in the CFT driven quantum cosmology — 30 min.
2. Kuznetsov A. (Yaroslavl State U.)
The third type of fermion mixing in the lepton and quark interactions with leptoquarks — 30 min.
3. Smolyakov M. (SINP MSU, Moscow)
Some divergencies in brane world models — 30 min.

Coffee Break. 11:30 – 11:50

4. Novikov O. (St.-Petersburg State U.)
Localization of scalar fields on self-gravitating thick brane: branons vs. Higgs-like bosons — 20 min.
5. Kirpichnikov D. (INR, Moscow)
LHC signatures of vector boson emission from brane to bulk — 20 min.
6. Kopeliovich V. (INR, Moscow)
Restriction on the neutron-antineutron oscillations from the SNO data on the deuteron stability — 20 min.

Parallel Section #2. 10:00

1. Mikheev N. (Yaroslavl State U.)
Neutrino energy-momentum losses due to $\nu \rightarrow \nu\gamma$ in a strong magnetic field with positronium contribution to the photon polarization operator — 30 min.
2. Pticyna K. (INR, Moscow)
Supermassive black holes as a possible sources of UHECR — 30 min.

3. Narynskaya E. (Yaroslavl State U.)
Magnetized electron plasma neutrino luminosity via resonant photon — 20 min.

Coffee Break. 11:30 – 11:50

4. Dvornikov M. (IZMIRAN)
Quantization of massive Majorana neutrinos in external fields — 20 min.
5. Lobanov A. (Moscow State U.)
Does the Borexino experiment have enough resolution to detect the solar neutrino day-night asymmetry? — 20 min.

Parallel Section #3. 10:00

1. Vasiliev M. (Lebedev Physics Inst., Moscow)
Holography, unfolding and higher-spin theory — 30 min.
2. Yung A. (PNPI, St. Petersburg)
r-Duality and "instead-of-confinement" mechanism in $N=1$ supersymmetric QCD — 30 min.
3. Anber M. (U. of Toronto)
2d affine XY-spin model/ 4d gauge theory duality and deconfinement — 30 min.

Coffee Break. 11:30 – 11:50

4. Alkalaev K. (Lebedev Physics Inst., Moscow)
Massless Hook fields and AdS/CFT correspondence — 30 min.
5. Zayakin A. (ITEP, Moscow & INFN, Perugia)
Matching three-point functions of BMN operators at weak and strong coupling. Exact one-loop equivalence. — 30 min.
6. Stepanyantz K. (Moscow State U.)
NSVZ beta-function and the higher covariant derivative regularization — 30 min.

Excursion to the Tolgsky Monastery. 14:00

Saturday, June 9

Plenary Session. 10:00

1. Khabibullin M. (INR, Moscow)
Latest results from T2K — 30 min.
2. Golubev V. (Budker Inst. of Nucl. Phys., Novosibirsk)
First results of experiments with SND detector at VEPP-2000 $e+e$ - collider in Novosibirsk — 30 min.
3. Mitsuka G. (Nagoya U.)
Recent results from the LHCf experiment — 30 min.

Coffee Break. 11:30 – 11:50

4. David G. (BNL)
The heavy ion connection - tests of QCD in its own medium — 30 min.
5. Musulmanbekov G. (JINR, Dubna)
Scientific program of the NICA project at JINR — 30 min.
6. Pakhlov P. (ITEP, Moscow)
Selected results from Belle experiment — 30 min.

Evening Sessions.

Parallel Section #1. 15:00

1. Leonidov A. (Lebedev Physical Inst., Moscow)
Instabilities in QED and QCD turbulent plasma — 30 min.
2. Kerbikov B. (ITEP, Moscow)
Quark Matter in Strong Magnetic Field — 30 min.
3. Pozdeeva E. (SINP MSU)
Trapped surface formation in AdS and entropy bound in heavy ions collisions — 30 min.

4. Godunov S. (ITEP, Moscow)
*Critical nucleus charge in a superstrong magnetic field:
effect of screening* — 30 min.

Coffee Break. 17:00 – 17:20

5. Balantsev I. (Moscow State U.)
*Relativistic particles in a strong magnetic field and dense
matter* — 30 min.
6. Kulagin S. (INR, Moscow)
Understanding neutrino-nuclear cross sections — 30 min.

Parallel Section #2. 15:00

1. Gruzinov A. (New York U.)
Intergalactic magnetic field — 30 min.
2. Tinyakov P. (ULB, Brussels & INR, Moscow)
Constraints on dark matter from neutron stars — 30 min.
3. Rumyantsev D. (Yaroslavl State U.)
*Resonant electron-positron pair production in magnetar
polar cap* — 30 min.
4. Piette B. (Univ. of Durham)
*Phase transition and anisotropic deformations of neu-
tron star matter* — 30 min.

Coffee Break. 17:00 – 17:20

5. Kurkov M. (Univ. of Naples)
*Spectral action, Weyl anomaly and the Higgs- dilaton
potential* — 30 min.
6. Semikoz V. (IZMIRAN & Valencia U.)
*Leptogenesis via hypermagnetic fields and baryon asym-
metry* — 30 min.
7. Hambye T. (Univ. of Brussels)
*The four basic ways of creating dark matter through a
portal* — 30 min.

8. Ivanov M. (Moscow State U. & INR, Moscow)
Constraining deviations from Lorentz invariance in the dark matter sector — 30 min.

Parallel Section #3. 15:00

1. Pankov A. (Gomel State Tech. U)
Spin determination of heavy nonstandard dilepton and diphoton resonances at the LHC — 30 min.
2. Smirnov A. (Yaroslavl State U.)
On mass limit for chiral color symmetry G' -boson from CMS data on $t\bar{t}$ production at LHC. — 30 min.
3. Duk V. (INR, Moscow & INFN, Perugia)
Search for heavy neutrino in kaon decays — 30 min.
4. Tlisov D. (INR, Moscow)
Search for W_R and heavy neutrino of the left-right symmetric models in pp collisions in CMS using the 2011 collision data — 30 min.

Coffee Break. 17:00 – 17:20

5. Levkov D. (INR, Moscow)
Electroweak symmetry breaking by boundary conditions in holographic technicolor models — 30 min.
6. Demidov S. (INR, Moscow)
Testing low energy supersymmetry breaking at LHC. — 30 min.
7. Nugaev E. (INR, Moscow)
Neutrino superluminality and searches of sterile neutrino decays. — 30 min.
8. Radionov A. (INR, Moscow)
Restrictions on the electromagnetic properties of the sterile neutrino — 20 min.
9. Petrova E. (Samara State Univ.)
Higgs potential bifurcation sets in MSSM and NMSSM — 20 min.
10. Timiryasov I. (Moscow State U. & INR, Moscow)
Heavy mesons physics in a model with large extra dimensions — 20 min.

Sunday, June 10

Plenary Session. 10:00

1. Gorbunov D. (INR, Moscow)
Overview of sterile neutrino — 30 min.
2. Dubovsky S. (New York University & INR, Moscow)
Solving the simplest theory of quantum gravity — 30 min.
3. Mukohyama S. (Kavli IPMU, U. of Tokyo)
Nonlinear massive gravity and cosmology — 30 min.

Coffee Break. 11:30 – 11:50

4. Poppitz E. (U. of Toronto)
Continuity, deconfinement and (super) Yang-Mills. — 30 min.
5. Serone M. (SISSA, Trieste & INFN, Trieste)
On the cut-off of higher dimensional field theories — 30 min.
6. *Closing*