

Institute for Nuclear Research
of the Russian Academy of Sciences
Joint Institute for Nuclear Research

QUARKS-2014

18th International Seminar on High Energy Physics
Suzdal, Russia, June 2 — 8, 2014.

Preliminary program

Moscow, 2014

Monday, June 2

Afternoon: Registration

Plenary Session. 17:00

1. Moore R. (Alberta U.)
The Latest Results from ATLAS — 40 min.
2. Lipatov L. (PNPI, St. Petersburg)
High energy production amplitudes in $N=4$ SUSY and unitarity — 40 min.

Coffee Break. 18:20 – 18:40

3. Rebbi C. (Boston U.)
Models of Electroweak Symmetry Breaking based on Strong Dynamics — 40 min.

Tuesday, June 3

Plenary Session. 10:00

1. Arefeva I. (Steklov Math. Inst., Moscow)
Holography and quark-gluon plasma formation in heavy ion collisions — 30 min.
2. Kazakov D. (JINR, Dubna)
Amplitudes in $D=6$ $N=(1,1)$ SYM theories — 30 min.
3. Tomasi-Gustafsson E. (IRFU/SPhN and IN2P3/IPN Orsay)
Physics with antiprotons at PANDA/FAIR — 30 min.

Coffee Break. 11:30 – 11:50

4. Kudenko Yu. (INR, Moscow)
T2K experiment: results and prospects — 30 min.
5. Bezrukov L. (INR, Moscow)
Geoneutrino — 30 min.
6. Kouznetsov O. (JINR, Dubna)
Spin physics experiments at NICA (SPD project) — 30 min.

Evening Sessions.

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

1. Chetyrkin K. (KIT, Karlsruhe)
Towards QCD running in 5 loops: quark mass anomalous dimension — 30 min.
2. Pivovarov A. (INR, Moscow)
NLO corrections to chromomagnetic operator contribution to total semileptonic B meson width — 30 min.
3. Kouznetsov O. (JINR, Dubna)
The COMPASS experiment at CERN — 30 min.

4. Polyarush A. (INR, Moscow)
The inclusive production of the meson resonances in neutrino interactions — 30 min.

Coffee Break. 17:00 – 17:20

5. Pivovarov G. (INR, Moscow)
Multi-particle processes and space-time dimension — 30 min.
6. Kataev A. (INR, Moscow)
The RG-inspired beta-expansion approach, its uniqueness, its link with the conformal symmetry limit in QCD and phenomenological applications — 30 min.
7. Sidorov A. (JINR, Dubna)
Determination of pion Fragmentation functions from a QCD analysis of the HERMES and COMPASS data on multiplicities — 30 min.
8. Shipilova A. (Samara State U.)
Dijet azimuthal decorrelations at the LHC in the parton Reggeization approach — 30 min.
9. Suetin D. (St.-Petersburg State U.)
Lepton pair production in pA-collisions and intra-nuclear rescattering effects — 30 min.

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

1. Kopeliovich V. (INR, Moscow)
"Buddha's light" of cumulative particles — 30 min.
2. Pikelner A. (JINR, Dubna)
Two-loop matching for Standard Model RGE analysis — 30 min.
3. Shaikhiev A. (INR, Moscow)
Search for heavy neutrino in the $K \rightarrow \mu\nu$ decay — 30 min.
4. Duk V. (INR, Moscow & INFN, Perugia)
Study of the rare decay $K \rightarrow \pi\gamma\gamma$ at the NA62 experiment — 30 min.

Coffee Break. 17:00 – 17:20

5. Leonidov A. (Lebedev Physical Inst., Moscow)
Formation of equation of state in evolving quantum field — 30 min.
6. Kartavtsev A. (Max-Planck Inst., Munich)
Improving Electro-Weak Fits with TeV-scale Sterile Neutrinos — 30 min.
7. Arbuzov A. (JINR, Dubna)
Spontaneous radiatively induced breaking of conformal invariance in the Standard Model — 30 min.
8. Lobanov A. (Moscow State U.)
On the theory of neutrino oscillations. — 30 min.
9. Astapov K. (INR, Moscow)
Light sgoldstino searches at CERN SPS — 20 min.

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

1. Koshelev A. (Vrije U., Brussel)
What does gravity learn from string field theory? — 30 min.
2. Alkalaev K. (Lebedev Physics Inst., Moscow)
On AdS(2) higher spin gravity — 30 min.
3. Francia D. (Scuola Normale, Pisa)
Maxwell-like description of higher spins — 30 min.
4. Snegirev T. (Tomsk State Pedagogical U.)
On massive spin 3/2 field interactions — 30 min.

Coffee Break. 17:00 – 17:20

5. Merzlikin B. (Tomsk State Pedagogical U.)
Two-loop low-energy effective action in Abelian supersymmetric Chern-Simons matter models — 30 min.
6. Bykov D. (Steklov Math. Inst., Moscow)
Ricci-flat metrics on complex cones — 30 min.
7. Bork L. (ITEP, Moscow & VNIIA)
Form factors and polytopes in N=4 SYM — 30 min.

8. Golubtsova A. (Peoples' Friendship University, Moscow)
Shock waves in Lifshitz spacetimes — 20 min.
9. Misuna N. (MIPT, Moscow)
Off-Shell Scalar Supermultiplet in the Unfolded Dynamics Approach — 20 min.

Wednesday, June 4

Excursion. 10:00

Evening Sessions.

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

1. Achasov N. (Sobolev Math. Inst., Novosibirsk)
Four problems for the $c\text{-}\tau$, b and super- $c\text{-}\tau$, b factories — 30 min.
2. Faustov R. (Dorodnicyn Computing Centre, Moscow)
Decays of the B_s meson — 30 min.
3. Troitsky S. (INR, Moscow)
From infrared pion form factor to ultraviolet QCD asymptotics without parameter tuning. — 30 min.
4. Jenkovszky L. (Bogolyubov ITP, Kiev)
Vector meson production in ultra-peripheral collisions at the LHC — 30 min.

Coffee Break. 17:00 – 17:20

5. Kulagin S. (INR, Moscow)
Nuclear parton distributions and the Drell-Yan process — 30 min.
6. Kiselev A. (Sobolev Math. Inst., Novosibirsk)
Comparative deep inelastic production of scalar and tensor mesons in $\gamma\gamma^$ collisions* — 30 min.
7. Kozhevnikov A. (Sobolev Math. Inst., Novosibirsk)
Breaking of isotopic invariance in the decay $\eta(1405/1475)$ to three pions — 30 min.
8. Yeletskikh I. (JINR, Dubna)
Search for new heavy spin-1 resonance Z^ at ATLAS detector in dimuon channel* — 30 min.

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

1. Krasnikov N. (INR, Moscow)
Search for dark force at CERN — 30 min.
2. Bednyakov A. (JINR, Dubna)
On the three-loop renormalization group analysis of the SM — 30 min.
3. Rusov A. (Yaroslavl State U.)
Dilepton Invariant-Mass Spectrum and Decay Rate in $B \rightarrow \pi \ell^+ \ell^-$ in the SM — 30 min.
4. Arbuzov B. (SINP, Moscow)
Effective Interactions in the Standard Model — 30 min.

Coffee Break. 17:00 – 17:20

5. Libanov M. (INR, Moscow)
4D CP violation from pure gauge in six dimensions. — 30 min.
6. Zhuk A. (Odessa State U)
Problematic aspects of Kaluza-Klein models. — 30 min.
7. Kisselev A. (IHEP, Protvino)
New solution for the warp factor in the Randall-Sundrum scenario — 30 min.
8. Kirpichnikov D. (INR, Moscow)
IR properties of one loop corrections to brane-to-brane propagators in models with localized vector bosons — 30 min.
9. Timiryasov I. (INR, Moscow)
Probing vector portal at SPS — 20 min.

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

1. Smilga A. (University of Nantes & ITEP)
Supersymmetric field theory with benign ghosts — 30 min.
2. Stepanyantz K. (Moscow State U.)
Construction of the NSVZ scheme for Abelian supersymmetric theories, regularized by higher derivatives — 30 min.
3. Gorsky A.
Hopf Solitons in the Faddeev-Skyrme model — 30 min.

4. Krikun A. (NORDITA, Stockholm)
Dyonic instanton in holographic model of QCD — 30 min.

Coffee Break. 17:00 – 17:20

5. Levkovich-Maslyuk F. (King's College, London)
BFKL Pomeron at Strong Coupling from the Quantum Spectral Curve of $N=4$ SYM — 30 min.
6. Lyakhovich S. (Tomsk Univ.)
Bypassing no-go theorems for consistent interactions in gauge theories — 30 min.
7. Reshetnyak A. (Inst. of Strength Phys. and Materials Science, Tomsk)
On consistent Lagrangian quantization of Yang-Mills theories without Gribov copies — 30 min.
8. Efimov G. (JINR, Dubna)
Quantum particle in random media — 30 min.

Thursday, June 5

Plenary Session. 10:00

1. Vasiliev M. (Lebedev Physics Inst., Moscow)
Current operator algebra and multiparticle symmetry. — 30 min.
2. Belavin A. (Landau Inst.)
Correlation functions in Minimal Liouville Gravity from Douglas string equation . — 45 min.
3. Mironov A. (Lebedev Inst. & ITEP, Moscow)
AGT and modular transformation of conformal blocks — 30 min.

Coffee Break. 11:45 – 12:05

4. Bezrukov F. (CERN & Connecticut U.)
Higgs inflation and large gravity waves – status and predictivity — 30 min.
5. Gorbunov D. (INR, Moscow)
Light inflaton and 3.5 keV line from dark matter sterile neutrino — 30 min.
6. Vikman A. (CERN)
NEC breaking, instabilities and UV completion — 30 min.

Evening Sessions.

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

1. Dremin I. (Lebedev Physics Inst., Moscow)
Connection of elastic and inelastic processes by unitarity condition and special regime of pp-scattering at 7 TeV. — 30 min.
2. Cherednikov I. (Universiteit Antwerpen & JINR Dubna)
Evolution of Transverse-Distance Dependent Parton Densities at Large Bjorken X — 30 min.

3. Kalaydzhyan T. (Stony Brook)
Chiral Superfluidity for QCD — 30 min.
4. Braguta V. (IHEP, Protvino)
Study of axial magnetic effect in $SU(2)$ QCD — 30 min.

Coffee Break. 17:00 – 17:20

5. Kotov A. (ITEP, Moscow)
Lattice QCD with nonzero chiral chemical potential. — 30 min.
6. Skachkova A. (JINR, Dubna & ITEP, Moscow)
Perspectives of study of direct photon production at FAIR — 30 min.
7. Khokonov A. (Kabardino-Balkarian State U.)
Determination of surface tension and viscosity of nuclear matter by capillary oscillations — 30 min.

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

1. Tinyakov P. (ULB, Brussels & INR, Moscow)
Primordial black holes as dark matter candidates: closing the remaining mass window — 30 min.
2. Tkachev I. (INR, Moscow)
Phase-space of cold dark matter in the Galaxy halo — 30 min.
3. Easson D. (Arizona U.)
Nonstandard Higgs Inflation — 30 min.
4. Sazhin M. (Sternberg Astron. Inst., Moscow)
Apparent motion of the ICRF sources — 30 min.

Coffee Break. 17:00 – 17:20

5. Sazhina O. (Sternberg Astron. Inst., Moscow)
Observational constraints on the types of cosmic strings — 30 min.
6. Klimai P. (INR, Moscow)
Primordial black hole constraints on some models of dissipative inflation — 30 min.

7. Tokareva A. (Moscow State U. & INR, Moscow)
Particle production in Starobinsky model of dark energy — 30 min.
8. Ivanov M. (Moscow State U. & INR, Moscow)
UV-completing Ghost Inflation — 30 min.

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

1. Isaev A. (JINR, Dubna)
Conformal algebra: R-matrix and star-triangle relations. — 30 min.
2. Ivanov E. (JINR, Dubna)
Deformed $N=4$ supersymmetric mechanics — 30 min.
3. Nirov Kh. (INR, Moscow)
Using functional relations to solve quantum integrable systems — 30 min.
4. Morozov Andrey. (ITEP, Moscow)
Link Polynomials and AENV conjecture — 30 min.

Coffee Break. 17:00 – 17:20

5. Zenkevich Y. (INR & ITEP, Moscow)
Spectral duality and gauge theories — 30 min.
6. Bulycheva K. (ITEP, Moscow)
Phase transitions in matrix models and knot invariants — 30 min.
7. Ovchinnikov A. (INR, Moscow)
On the particle excitations in the XXZ spin chain — 30 min.
8. Gelfond O. (Institute of System Research RAS)
Higher-Rank Fields and Currents — 30 min.

Conference Dinner. 20:00

Friday, June 6

Plenary Session. 10:00

1. Nesvizhevsky V. (Laue-Langevin Inst., Grenoble)
Diamond nanopowders: a new type of neutron reflectors.
Will it lead to a new generation of slow-neutron sources? — 30 min.
2. Shevchenko V. (Kurchatov Inst., Moscow)
Quantum measurements and Landauer principle — 30 min.
3. Penin A. (Alberta U. & INR, Moscow)
Testing QED with positronium bound state — 30 min.

Coffee Break. 11:30 – 11:50

4. Kharzeev D. (Stony Brook)
The chiral magnetic effect: from quark-gluon plasma to Dirac semimetals — 30 min.
5. Zakharov V. (ITEP, Moscow & MPI, Munich)
On consistency of hydrodynamic approximation for chiral media — 30 min.
6. Postnov K. (Sternberg Astron. Inst.)
Constraints on narrow-band GW signals from pulsar timing array observations — 30 min.

Evening Sessions.

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

1. Barvinsky A. (Lebedev Physics Inst., Moscow)
Dark matter as a ghost free conformal extension of Einstein theory — 30 min.
2. Toporensky A. (Sternberg Astron. Inst., Moscow)
Cosmological dynamics of a scalar field in teleparallel gravity — 30 min.

3. Berezin V. (INR, Moscow)
On the phenomenological description of particle creation and its influence on the space-time metrics — 30 min.
4. Gruzinov A. (New York U.)
Scenarios of Inflation — 30 min.

Coffee Break. 17:00 – 17:20

5. Sivanesan R. (IAP, Paris)
A no go theorem for galileon-like P-forms — 30 min.
6. Smirnov A. (INR, Moscow)
Interacting thin shells in the interior of a Reissner-Nordstrom black hole — 30 min.
7. Ageev D. (Steklov Math. Inst., Moscow)
Holography of Wilson loops in rotating black holes — 20 min.
8. Dyadina P. (Sternberg Astron. Inst., Moscow)
On evaporation of Randal-Sundrum black holes — 20 min.

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

1. Yung A. (PNPI, St. Petersburg)
Non-Abelian strings and 2D-4D correspondence — 30 min.
2. Kerbikov B. (ITEP, Moscow)
Intersection points of magnetic, Yang-Mills and gravitational fields — 30 min.
3. Akhmedov E. (ITEP, Moscow)
Secularly growing loop contributions in strong electric fields — 30 min.
4. Gorbenko V. (New York U.)
QCD Flux Tube Spectra from Approximate Integrability — 30 min.

Coffee Break. 17:00 – 17:20

5. Satunin P. (INR, Moscow)
Semiclassical description of particle production in external fields. — 30 min.

6. Vernov S. (SINP, Moscow)
Induced gravity models with polynomial potentials — 30 min.
7. Pozdeeva E. (SINP MSU)
Stable Exact Cosmological Solutions in Induced Gravity Models — 30 min.
8. Zhokhov R. (IHEP, Protvino)
Chiral symmetry breaking in (2+1)-dimensional Gross-Neveu model with Zeeman interaction with external tilted magnetic field — 20 min.

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

1. Demidov S. (INR, Moscow)
NSI and neutrinos from dark matter annihilations in the Sun. — 30 min.
2. Tsytrinov A. (Sukhoi State Technical University of Gomel)
Spin identification of Higgs boson in diphoton production at the Large hadron collider — 30 min.
3. Malgin A (INR, Moscow)
Universal formula for the muon-induced neutron yield — 30 min.
4. Agafonova N (INR, Moscow)
Neutrons produced by muon in LVD@Gran Sasso — 30 min.

Coffee Break. 17:00 – 17:20

5. Tlisov D. (INR, Moscow)
Exotica searches in pp collisions at 8 TeV in the CMS detector at the LHC — 30 min.
6. Kirsanov M. (INR, Moscow)
Search for a heavy neutrino and right-handed W boson of the left-right symmetric model in pp collisions at 8 TeV. — 30 min.
7. Alikhanov I. (BNO INR)
The Glashow resonance in neutrino-photon scattering — 30 min.
8. Radionov A. (INR, Moscow)
Paraphoton production in electron beam dump experiments — 20 min.

9. Petrova O. (JINR, Dubna)
The effective nucleon axial mass approach and quasielastic neutrino event rates in the Near Detector of NOvA — 20 min.
10. Ivanov A. (St.-Petersburg State U.)
MC generator HARDPING: high-energy scattering leptons and hadrons off nuclei — 20 min.

Saturday, June 7

Plenary Session. 10:00

1. Domainko W. (Max Planck Inst., Heidelberg)
Recent highlights from HESS — 30 min.
2. Matthews J. (Utah U.)
*Update on Ultra High Energy Cosmic Ray Measurements
by the Telescope Array* — 30 min.
3. Parente Bermudez G. (Santiago de Compostela U.)
Physics Results from the Pierre Auger Observatory — 30 min.

Coffee Break. 11:30 – 11:50

4. Rubtsov G. (INR, Moscow)
*Primary composition of ultra-high-energy cosmic rays
with the Telescope Array surface detector* — 30 min.
5. Poluhina N. (Lebedev Physics Inst., Moscow)
*Search for Superheavy Elements in Galactic Cosmic
Rays* — 30 min.
6. Potrebnikov Y. (JINR, Dubna)
*Prospect for dense baryonic matter at Nuclotron-NICA:
BM@N and MPD projects* — 30 min.

Evening Sessions.

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

1. Haberichter M. (Kent U.)
Isospinning Skyrmions — 30 min.
2. Nugaev E. (INR, Moscow)
Particle-like Q-balls — 20 min.
3. Smolyakov M. (SINP MSU, Moscow)
Some general properties of $U(1)$ gauged Q-balls — 20 min.

4. Gulamov I. (SINP MSU, Moscow)
Linearized solutions for $U(1)$ gauged Q -ball — 20 min.
5. Shkerin A. (INR, Moscow)
 Q -tubes in a piece-wise parabolic potential — 20 min.

Coffee Break. 16:50 – 17:10

6. Shnir Ya. (JINR, Dubna)
Isorotating knots and baby Skyrmions — 30 min.
7. Pismenskii A. (St.-Petersburg State U.)
Scaling violation in logarithmic dimensions in massless scalar quantum field theories — 30 min.
8. Godunov S. (ITEP, Moscow)
Dependence of the atomic energy levels on a superstrong magnetic field with account of a finite nucleus radius — 30 min.
9. Novikov O. (St.-Petersburg State U.)
Localization on a thick brane in the presence of defect — 30 min.
10. Pozdeeva T. (MAI, Moscow)
Potentials in modified spaces AdS_5 with moderate increase in entropy — 30 min.

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

1. Dedenko L. (Moscow State U.)
Testing High Energy Cosmic Ray Interaction Models with the Atmospheric Muon Data — 30 min.
2. Pshirkov M. (Sternberg Astron. Inst., Moscow)
Gamma-ray transients as seen by Fermi-LAT — 30 min.
3. Kolevatov S. (St.-Petersburg State U.)
On the effect of surface pion condensate on the spectrum of neutron stars — 30 min.
4. Kuznetsov A. (Yaroslavl State U.)
Neutrino production of electron-positron pairs at excited Landau levels in a strong magnetic field — 30 min.

Coffee Break. 17:00 – 17:20

5. Rumyantsev D. (Yaroslavl State U.)
Neutrino photoproduction on the electron in dense magnetized medium — 30 min.
6. Semikoz V. (IZMIRAN & Valencia U.)
Instability of magnetic fields in early universe driven by neutrino asymmetries — 30 min.
7. Panin A. (INR, Moscow)
Gravitational waves from an early matter era: numerical approach. — 30 min.
8. Ramazanov S. (ULB, Brussels)
Probing primordial statistical anisotropy with WMAP and Planck data. — 30 min.
9. Mironov S. (INR, Moscow)
Effect of intermediate Minkowskian evolution on CMB bispectrum — 20 min.
10. Piskunov M. (MSU & INR, Moscow)
Time Stretching of the GeV Emission of GRBs: Fermi LAT data vs geometrical model — 20 min.

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

1. Babichev E. (LPT Orsay)
Dressing black holes with Galileons — 30 min.
2. Rubakov V. (INR, Moscow)
Towards creating a universe in the laboratory — 30 min.
3. Arbuzova E. (Dubna U. & Novosibirisk State U.)
Cosmic antigravity — 30 min.
4. Kuznetsov M. (INR, Moscow)
Effects of Lorentz violation in superluminal theories — 30 min.

Coffee Break. 17:00 – 17:20

5. Levkov D. (INR, Moscow)
Multisoliton solutions in CGHS model with a boundary — 30 min.

6. Fitkeovich M. (INR, Moscow)
*Critical phenomena in two-dimensional dilaton gravity
with a boundary* — 30 min.
7. Rannu K. (Sternberg Astron. Inst., Moscow)
Randall-Sundrum model in post-Newtonian limit — 30 min.
8. Chirkov D. (Sternberg Astron. Inst., Moscow)
*Exact exponential solutions in Einstein-Gauss-Bonnet
flat anisotropic cosmology* — 30 min.

Sunday, June 8

Plenary Session. 10:00

1. Urban F. (ULB, Brussels)
Local Observables in a Landscape of Infrared Gauge Modes — 30 min.
2. Novikov V. (ITEP, Moscow)
Cosmological bound on $e+e^-$ mass difference — 30 min.
3. Sibiryakov S. (CERN & EPFL & INR RAS)
From scale invariance to Lorentz symmetry — 30 min.

Coffee Break. 11:30 – 11:50

4. Frolov V. (Univ. Alberta, Canada)
Information loss problem and a 'black hole' model with a closed apparent horizon — 30 min.
5. Dolgov A. (ITEP, Moscow & Ferrara U. & NSU, Novosibirsk)
Stars older than the universe and possible mechanism of their creation. — 30 min.
6. *Closing*