QUARKS-2004

13th International Seminar on High Energy Physics
Pushkinskie Gory, Russia, May 24 — 30, 2004.

Preliminary Program

Moscow,2004

Monday, May 24

MORNING: REGISTRATION

Plenary Session. 15:45

1. *Opening*

2. Stefanski, R. (Fermlab, Batavia)
   A Select Overview of Neutrino Experiments and Neutrino Oscillations — 30 min. [1]

3. Suzuki, A. (Tohoku University, Sendai)
   Present and Near-Future in KamLAND — 30 min.

4. Troitsky, S. (INR RAS, Moscow)
   Ultra-high energy cosmic rays and their sources — 30 min.

Coffee Break. 17:15 – 17:30

5. Nesvizhevsky, V. (Institute Laue-Langevin, Grenoble)
   Quantum states of neutrons in the Earth's gravitational field and short-range forces — 30 min.

6. Dzhilkibaev, Z. (INR RAS, Moscow)
   Status of Baikal neutrino experiment — 30 min.

7. Berezinsky, V. (Lab. Naz. Gran Sasso, L'Aquila)
   Mirror matter and mirror neutrinos — 30 min.

8. Starobinsky, A. (Landau Inst. for Theor. Physics, Moscow)
   How constant is the cosmological constant? — 30 min.

[1] Time of talks includes discussion

Tuesday, May 25

MORNING: VISIT TO PUSHKIN MEMORIAL ESTATE

Evening Sessions

Parallel Session #1. 15:45

Large Hall

1. Bolotov, V. (INR RAS, Moscow)
   Pion decays review — 30 min.

2. Goudzovsky, E. (JINR, Dubna)
   Recent results from NA48 experiment — 30 min.

3. Kudenko, Yu. (INR RAS, Moscow)
   Study of the decay $K^+ \to$ $^+$ — 30 min.

4. Polarush, A. (INR RAS, Moscow)
   Investigation of rare decay $K \to e$ *on ISTRA setup* — 30 min.

Coffee Break. 17:45 – 18:00

5. Vysotsky, M. (ITEP, Moscow)
   Difference of $\tilde{}$ *and in fitting the parameters of CKM matrix* — 25 min.

6. Boos, E. (SINP MSU, Moscow)
   MSSM Higgs Bosons in the Intense Coupling Regime — 30 min.

7. Sherstnev, A. (SINP MSU, Moscow)
   Single top quarks at hadron colliders — 20 min.

8. Smirnov, A. D. (Yaroslavl State University)
   Rare t*-quark decays in the minimal four color symmetry model* — 20 min.

9. Popov, P. (Yaroslavl State University)
   Mass limits for chiral and scalar leptoquarks from $K_L^0 \to$ e *decay* — 20 min.

Parallel Session #2. 15:45

Small Hall

1. Giller, M. (University of Lodz)
   The Pierre Auger Observatory - what astrophysical problems is it going to solve? — 30 min.

2. Shinozaki, K. (Max-Planck-Institut für Physik, München)
   AGASA Results — 30 min.

3. Pravdin, M. (Yakutsk Cosmophys. Res. Inst.)
   The Cosmic Ray Spectrum at Ultrahigh Energies — 30 min.

4. Besson, D. (University of Kansas)
   Radiodetection of ultra-high energy neutrinos — 30 min.

Coffee Break. 17:45 – 18:00

5. Zheleznykh, I. (INR RAS, Moscow)
   Alternative detection of ultra-high energy cosmic neutrinos — 20 min.

6. Postnov, K. (Sternberg Astronomical Institute MSU, Moscow)
   Gamma-Ray Bursts and Hypernovae — 25 min.

7. Tkachev, I. (CERN and INR, Moscow)
   First realistic map of Extra-Galactic Magnetic Fields and Ultra-High Energy Cosmic Rays — 25 min.

8. Tinyakov, P. (Universite Libre de Bruxelles and INR, Moscow)
   Superheavy dark matter model of cosmic rays versus SUGAR data — 25 min.

9. Stern, B. (INR RAS, Moscow)
   A test for UHECRs - AGNs correlation using "Search for the Real Sample" Method — 25 min.

Parallel Session #3. 15:45

Presidium Hall.

1. Belavin, A. (Landau Inst. for Theor. Physics, Moscow)
   Correlation functions of perturbed minimal models of conformal field theory — 30 min.

2. Semikhatov, A. (Lebedev Physical Institute, Moscow)
   TBA — 30 min.

3. Nirov, Kh. (INR RAS, Moscow)
   Affine Toda solitons: Two ways to the same end — 25 min.

4. Spiridonov, V. (JINR, Dubna)
   Elliptic integrable systems and related special functions — 25 min.

Coffee Break. 17:35 – 17:50

5. Ovchinnikov, A. (INR RAS, Moscow)
   On the exactly solvable pairing models for bosons — 20 min.

6. Ziyatdinov, I. (Steklov Mathematical Institute, Moscow)
   Parquet approximation for Two-Matrix model — 20 min.

7. Vernov, S. (SINP MSU, Moscow)
   From the Laurent series solutions to the elliptic solutions of nonintegrable systems — 20 min.

8. Smirnov, A. (Lebedev Physical Institute, Moscow)
   Euclidean formulation of indefinite metric QFT — 20 min.

9. Grigoriev, M. (LPI, Moscow & Universite Libre de Bruxelles)
   First order formulations and action principles — 20 min.

Wednesday, May 26

Plenary Session. 9:45

1. Shirkov, D. (JINR, Dubna)
   Describing QCD observables in the 1 GeV and IR regions — 30 min.

2. Zakharov, V. (Max-Planck-Institut für Physik, München)
   Low-dimension vacuum defects in lattice Yang-Mills theories — 30 min.

3. Kopeliovich, V. (INR RAS, Moscow)
   Exotic baryon states in topological soliton models — 30 min.

Coffee Break. 11:15 – 11:30

4. Dolgov, A. (INFN, Ferrara and ITEP, Moscow)
   Cosmic magnetic fields — 30 min.

5. Lukash, V. (Astro Space Center LPI, Moscow)
   Progress, puzzles and problems of minimal cosmological model — 30 min.

6. Porrati, M. (New York University)
   Three (my) Roads to Massive Gravity — 30 min.

7. Randall, L. (Harvard University, Cambridge)
   TBA — 30 min.

8. Tanaka, T. (Kyoto University)
   Gravity in braneworld — 30 min.

Evening Sessions

Parallel Session #1. 15:45

Large Hall

1. Moa, T. (University of Stockholm)
   B physics at LEP — 30 min.

2. Moch, M. (Institut for Experimentelle Kernphysik, Universität Karlsruhe)
   *Spectroscopy of B**-mesons* — 30 min.

3. Likhoded, A. (IHEP, Protvino)
   Problem of Open Charm and Beauty Production — 30 min.

4. Penin, A. (Karlsruhe U. and INR, Moscow)
   Heavy Quarkonium Hyperfine Splitting in Nonrelativistic Renormalization Group — 30 min.

Coffee Break. 17:45 – 18:00

5. Pineda, A. (Universitat de Barcelona)
   Resummation of logs in heavy quarkonium decays — 30 min.

6. Kalmykov, M. (JINR, Dubna)
   $O(\ _s)$ *corections to the pole mass of t-quark within Standard Model* — 20 min.

7. Faustov, R. (Council for Cybernetics RAS, Moscow)
   Properties of heavy hadrons in the relativistic quark model — 20 min.

8. Badalian, A. (ITEP, Moscow)
   Strong Coupling in IR region from Splittings in Bottomonium — 20 min.

9. Pivovarov, A. (INR RAS, Moscow)
   Nonfactorizable corrections to $B^0 - \bar{B}^0$ *mixing in QCD perturbation theory* — 20 min.

Parallel Session #2. 15:45

Small Hall

1. Ter-Martirosyan, K. (ITEP, Moscow)
   TBA — 30 min.

2. Shirman, Yu. (Los Alamos National Laboratory)
   A second look at the hidden sector — 30 min.

3. Mikheeva, E. (Astro Space Center LPI, Moscow)
   Observational constraints on inflationary models — 20 min.

Coffee Break. 17:05 – 17:30

4. Kulagin, S. (INR RAS, Moscow)
   Uncertainties of extraction of $\sin^2 {}_W$ *from neutrino DIS* — 20 min.

5. Laperashvili, L. (ITEP, Moscow)
   New bound state $t + \bar{t}$ *and the fundamental-weak scales hierarchy in the Standard Model* — 20 min.

6. Pankov, A. (Technical University of Gomel)
   Search for and identification of graviton effects at e+e- and hadron colliders — 20 min.

7. Bityukov, S. (INR RAS, Moscow)
   Uncertainties in estimation of quality of planned experiments — 20 min.

8. Babich, A. (Gomel State University)
   The optimal methods of searching New Physics phenomena — 20 min.

Parallel Session #3. 15:45

Presidium Hall

1. Vasiliev, M. (Lebedev Physical Institute, Moscow)
   Higher spin theories in any dimension — 30 min.

2. Lipatov, L. (Petersburg Nuclear Physics Institute)
   DGLLAP and BFKL evolution equations in $\mathsf{N} = 4$ SUSY — 20 min.

3. Rosten, O. (Southampton University)
   The Gauge Invariant ERG — 30 min.

4. Rosly, A. (ITEP, Moscow)
   Gluon amplitudes and twistors — 20 min.

Coffee Break. 17:25 – 17:40

5. Akhmedov, E. (ITEP, Moscow)
   How perturbation series in quantum field theory is related to two-dimensional simplicial gravity — 20 min.

6. Tipunin, I. (Lebedev Physical Institute, Moscow)
   Higher spin equations in curved backgrounds — 20 min.

7. Didenko, V. (Lebedev Physical Institute, Moscow)
   Free Field Dynamics in the generalized AdS (super)space — 20 min.

8. Alkalaev, K. (Lebedev Physical Institute, Moscow)
   Free mixed-symmetry gauge fields in AdS(d) — 20 min.

9. Mironov, A. (Lebedev Physical Institute, Moscow)
   TBA — 20 min.

CONCERT

Thursday, May 27

VISIT TO PSKOV, ISBORSK, PECHORY.

Friday, May 28

Morning Sessions

Parallel Session #1. 9:45

Large Hall

1. Simonov, Yu. (ITEP, Moscow)
   Chiral Symmetry Breaking in QCD — 30 min.

2. Sumino, Y. (Tohoku Gakuin University)
   Perturbative QCD potential and string tension — 30 min.

3. Shevchenko, V. (ITEP, Moscow)
   Current correlations in QCD: OPE vs large N dynamics — 20 min.

4. Trusov, M. (ITEP, Moscow)
   Baryons in the nonperturbative string approach — 20 min.

Coffee Break. 11:25 – 11:40

5. Rebbi, C. (Boston University)
   Lattice QCD with overlap fermions — 30 min.

6. Mitrjushkin,V. (JINR, Dubna)
   Transfer matrix approach in lattice gauge theory — 30 min.

7. Poppitz, E. (University of Toronto)
   Supersymmetry on a real lattice — 30 min.

8. Pavlovsky, O. (MSU, Moscow)
   Random Lattice QCD and chiral effective theories — 20 min.

Parallel Session #2. 9:45

Small Hall

1. Vainshtein, A. (University of Minnesota)
   Hadronic effects in the muon anomalous magnetic moment — 30 min.
2. Krasnikov, N. (INR RAS, Moscow)
   Search for sleptons at LHC — 30 min.
3. Khoze, V. (University of Durham & Petersburg Nuclear Physics Institute)
   Prospects for New Physics studies in the processes with forward protons at the LHC — 30 min.
4. Dudko, L. (SINP MSU, Moscow)
   CompHEP and MCDB — 30 min.

Coffee Break. 11:45 – 12:00

5. Bajc, B. (Jozef Stefan Institute, Slovenia)
   Seesaw, SUSY and SO(10) — 30 min.
6. Gorbunov, D. (INR RAS, Moscow)
   Hyperon physics with light sgoldstino — 25 min.
7. Demidov, S. (INR RAS, Moscow)
   Search for Higgs boson and other neutral scalar particles in association with high energy jet at LHC — 20 min.
8. Novikov, V. (ITEP, Moscow)
   TBA — 20 min.
9. Alexeyev, S. (Sternberg Astronomical Institute MSU, Moscow)
   Schwarzschild-Gauss-Bonnet black holes at the LHC — 20 min.

Parallel Session #3. 9:45

Presidium Hall

1. Vanhove, P. (CEA Saclay)
   Localization of gravity in string theory — 30 min.

2. Nugaev, E. (INR RAS, Moscow)
   Hierarchical fermionic mass pattern, large extra dimensions and family number conservation — 30 min.

3. Andrianov, V. (V.A. Fock Institute of Physics, St. Petersburg)
   Localization of light particles on fermion induced Domain walls — 20 min.

4. Singleton, D. (California State University)
   Brane in 6D with an Increasing Gravitational Trapping Potential — 20 min.

Coffee Break. 11:25 – 11:40

5. Barvinsky, A. (Lebedev Physical Institute, Moscow)
   Covariant nonlocal action for long-distance modifications of Einstein theory — 30 min.

6. Smolyakov, M. (SINP MSU, Moscow)
   Linearized gravity in the RS1 model with brane-localized curvature terms — 20 min.

7. Parnachev, A. (Rutgers University)
   Localized tachyons and D-branes — 20 min.

8. Toporensky, A. (Sternberg Astronomical Institute MSU, Moscow)
   Scalar field dynamics on a brane — 20 min.

9. Gogberashvili, M. (Andronikashvili Institute of Physics, Tbilisi)
   Observable Algebra — 30 min.

Evening Sessions

Parallel Session #1. 15:45

Large Hall

1. Passeri, A. (INFN - Sezione Roma III)
   Recent results from the KLOE experiment at DAFNE — 30 min.

2. Achasov, N. (Sobolev Institute for Mathematics, Novosibirsk)
   Problem of light scalar mesons — 20 min.

3. Abrikosov, A. (ITEP, Moscow)
   Spectral boundary conditions in the bag model — 20 min.

4. Bakulev, A. (JINR, Dubna)
   Pion distribution amplitude - from theory to data (CELLO, CLEO, E791, CEBAF) — 20 min.

Coffee Break. 17:15 – 17:30

5. Mikhailov, S. (JINR, Dubna)
   Generalization of BLM procedure for any number of loops and its scales — 20 min.

6. Koshelkin, A. (Moscow Instituite for Physics and Engineering)
   Production of soft photons in dense matter in the formalism of two-particle Green's functions — 20 min.

7. Tarasov, O. (DESY, Hamburg)
   New insight on Feynman integrals — 20 min.

Parallel Session #2. 15:45

Small Hall

1. Semikoz, V. (IZMIRAN, Troitsk)
   Mean magnetic field generation by -effect driven by neutrinos in early universe plasma — 25 min.

2. Rubtsov, G. (INR RAS, Moscow)
   Narrowing the window for millicharged particles by CMB anisotropy — 20 min.

3. Grigoriev, D. (University of Ireland in Maynooth & INR RAS)
   Baryogenesis from Quark-Gluon Plasma — 25 min.

4. Kisselev, A. (IHEP, Protvino)
   Gravireggeons in Extra Dimensions and Ultra-High Energy Neutrinos — 20 min.

Coffee Break. 17:15 – 17:30

5. Zhuk, A. (Odessa University)
   Phenomenology of multidimensional cosmological models — 25 min.

6. Melnikov, V. (Centre for Gravitation and Fundamental Metrology, Moscow)
   Multidimensional 2-component cosmological models — 25 min.

7. Smirnov, A. (INR RAS, Moscow)
   TBA — 20 min.

Parallel Session #3. 15:45

Presidium Hall

1. Arefeva, I. (Steklov Mathematical Institute, Moscow)
   D-brane decay and SFT — 30 min.

2. Buchbinder, J. (Tomsk State Pedagogical University)
   Progress in Construction of Low-Energy Effective Action in $N = 4$ Supersymmetric Yang-Mills Theory — 30 min.

3. Marshakov, A. (Lebedev Physical Institute, Moscow)
   Integrability of AdS/CFT correspondence — 30 min.

Coffee Break. 17:15 – 17:30

4. Gorsky, A. (ITEP, Moscow)
   Spin chains and gauge/string duality — 30 min.

5. Smilga, A. (University of Nantes)
   Younger (low-dimensional) sisters of Seiberg-Witten effective theory — 30 min.

6. Samsonov, I. (Tomsk Polytechnic University)
   On Low-Energy Effective Action in $N = 3$ Supersymmetric Gauge Theory — 20 min.

CONFERENCE DINNER.

Saturday, May 29

Morning Sessions

Parallel Session #1. 9:45

Large Hall

1. Ioffe, B. (ITEP, Moscow)
   Production of light antinucleous in heavy ion collisons — 30 min.

2. Bopp, F. (University Siegen)
   RHIC data and the multichain Monte Carlo DPMJET-III — 30 min.

3. Topilskaya, N. (INR RAS, Moscow)
   Charmonium production in $p-A$ and lead-lead collisions at the CERN FPF — 30 min.

Coffee Break. 11:15 – 11:30

4. Hatta, Y. (Kyoto University & RIKEN)
   Relation between the chiral and deconfinement phase transitions — 30 min.

5. Agasian, N. (ITEP, Moscow)
   Magnetic confinement in finite temperature QCD — 20 min.

6. Leonidov, A. (Lebedev Physical Institute, Moscow)
   Color Glass Condensate in High Energy QCD — 20 min.

7. Skalozub, V. (Dnepropetrovsk National University)
   On generation of magnetic fields in $SU(3)$ gluodynamics at high temperature — 20 min.

Parallel Session #2. 9:45

Small Hall

1. Sazhin, M. (Sternberg Astronomical Institute MSU, Moscow)
   Possible observation of a cosmic string — 30 min.

2. Semikoz D. (UCLA & INR RAS, Moscow)
   Experimental and astrophysical constraints on MeV sterile neutrinos — 25 min.

3. Khriplovich, I. (BINP RAS, Novosibirsk)
   Quantum Long-Range Corrections in General Relativity — 30 min.

4. Fairbairn, M. (Universite Libre de Bruxelles)
   The equation of state of dark matter — 20 min.

Coffee Break. 11:30 – 11:45

5. Eroshenko, Yu. (INR RAS, Moscow)
   Dark matter annihilation in small scale clumps — 20 min.

6. Dubovsky, S. (INR RAS, Moscow & CERN)
   Star tracks in the ghost condensate — 30 min.

7. Peloso, M. (Canadian Institute for Theoretical Astrophysics, Toronto)
   Phenomenology of ghost condensation — 30 min.

8. Krotov, D. (INR RAS, Moscow)
   TBA — 20 min.

9. Kiselev, V. (IHEP, Protvino)
   Vector field as a quintessence partner — 20 min.

10. Babichev, E. (INR RAS, Moscow)
    Accretion of phantom energy onto black hole — 20 min.

Parallel Session #3. 9:45

Presidium Hall

1. Slavnov, A. (Steklov Mathematical Institute, Moscow)
   Noncommutative gauge theory in linear gauge — 30 min.

2. Sibiryakov, S. (INR RAS, Moscow)
   Domain walls between gauge theories and folded D-branes — 25 min.

3. Polyubin, I. (Landau Inst. for Theor. Physics, Moscow)
   Commutativity and WDVV Equations — 25 min.

4. Krykhtin, V. (Tomsk Polytechnic University)
   Renormalization of the composite operators in Noncommutative field theory — 20 min.

Coffee Break. 11:25 – 11:40

5. Volovich, I. (Steklov Mathematical Institute, Moscow)
   Nonlocal Dynamics in p-adic and String Field Theories — 30 min.

6. Ivanov, E. (JINR, Dubna)
   Nilpotent deformations of Euclidean $N = (1; 1)$ supersymmettric theories — 30 min.

7. Chekhov, L. (Steklov Mathematical Institute, Moscow)
   Quantum Thurston theory and gravity — 30 min.

8. Pirogov, Yu. (IHEP, Protvino)
   Space-time revisited — 20 min.

Evening Sessions

Parallel Session #1. 15:45

Large Hall

1. Chetyrkin, K. (INR RAS, Moscow & Univ. of Karlsruhe)
   First five-loop $O(\alpha_s^4)$ QCD results — 30 min.

2. Kotikov, A. (JINR, Dubna)
   Small-x behavior of parton distributions — 20 min.

3. Ermolaev, B. (A. F. Ioffe Phys. Tech. Inst., St. Petersburg)
   Spin-dependent DIS structure function g_1 at small x — 20 min.

4. Kataev, A. (INR RAS, Moscow)
   Comparison of the Gotfried and Adler sum rules within large – N_c expansion — 30 min.

5. Zykunov, V. (Gomel State Technical University)
   Radiative corrections for SLAC experiment E-158 — 20 min.

Coffee Break. 17:45 – 18:00

6. Kuraev, E. (JINR, Dubna)
   Feynman rules for effective Regge field theory — 30 min.

7. Pivovarov, G. (INR RAS, Moscow)
   Phase transition in a field theory quantized on light-front — 20 min.

8. Cherednikov, I. (JINR, Dubna)
   Study of QCD instanton effects in high energy hadron processes within the Wilson integral approach — 20 min.

9. Abramovsky, V. (Novgorod State University)
   Diffractive processes at high energies — 20 min.

10. Khokonov, A. (Kabardino-Balkarian State University)
    Instanton vacuum stochastic dynamics — 20 min.

Parallel Session #2. 15:45

Small Hall

1. Studeninkin, A. (Physics Dept. MSU, Moscow)
   Neutrino in magnetic fields — 30 min.

2. Chistyakov, M. (Yaroslavl State University)
   Photon-neutrino processes in magnetized plasma — 30 min.

3. Mikheev, N. (Yaroslavl State University)
   Neutrino-photon decay $\to \tilde{}$ *in a strongly magnetized plasma* — 20 min.

4. Narynskaya, E. (Yaroslavl State University)
   Photon conversion into sterile neutrino $\to {}_s\bar{}_s$ *via* Z' *bozon* — 20 min.

5. Rumyantsev, D. (Yaroslavl State University)
   Photon splitting in a strongly magnetized plasma — 20 min.

Coffee Break. 17:45 – 18:00

6. Kachelriess, M. (Max-Planck-Institut für Physik, München)
   Oscillations of supernova neutrinos — 30 min.

7. Dokuchaev, V. (INR RAS, Moscow)
   High-energy neutrino from creating massive black hole — 20 min.

8. Gvozdev, A. (Yaroslavl State University)
   Neutrino cooling and heating in collapsar with strong magnetic field — 20 min.

9. Ognev, I. (Yaroslavl State University)
   Neutrino effects in Supernova envelope with strong magnetic field — 20 min.

Parallel Session #3. 15:45

Presidium Hall

1. Ritus, V. (Lebedev Physical Institute, Moscow)
   Symmetry, connecting the processes in 2– *and* 4– *dimensional space-times, and the value* $_0 = 1=4$ *for the bare fine structure constant* — 30 min.

2. Lipatov, L. (Petersburg Nuclear Physics Institute)
   Effective action approach to Pomeron and Odderon in QED — 20 min.

3. Zakrzewski, W. (University of Durham)
   Harmonic maps and gravitationg monopoles or Skyrmions — 30 min.

4. Shnir, Ya. (University of Oldenburg)
   New solutions of the Yang-Mills-Higgs theory — 20 min.

Coffee Break. 17:25 – 17:40

5. Levkov, D. (INR RAS, Moscow)
   Soliton production in high-energy collisions: a toy model — 25 min.

6. Mikhailov, A. (CALTECH and ITEP, Moscow)
   Geometry of fast moving strings — 25 min.

7. Yung, A. (Petersburg Nuclear Physics Institute)
   Non-Abelian flux tubes and monopoles in $\mathsf{N} = 2$ *SUSY QCD* — 25 min.

8. Lavrelashvili, G. (A. Razmadze Mathematical Institute, Tbilisi)
   Aspects of metastable vacuum decay — 20 min.

9. Malakhov, I. (MSU, Moscow)
   The method of Casimir energy renormalization in the presence of logarithmic divergencies — 20 min.

Sunday, May 30

Plenary Session. 9:45

Large Hall

1. Finocchiaro, G. (Laboratori Nazionali di Frascati)
   Review of BABAR results — 30 min.

2. Aihara, H. (University of Tokyo)
   Recent results from BELLE — 30 min.

3. Besson, D. (University of Kansas)
   CLEO results on quarkonium spectroscopy — 30 min.

Coffee Break. 11:15 – 11:30

4. Grojean, C. (CEA Saclay)
   Higgsless electroweak physics — 30 min.

5. Czaki, C. (Cornell University, Ithaca)
   Electroweak symmetry breaking from extra dimensions — 30 min.

6. Kazakov, D. (JINR, Dubna)
   Dark Matter in the Universe within the MSSM — 30 min.

DEPARTURE TO PSKOV