

# Plenary Talks

## Monday, April 11

10.00-11.00 **A.Gurevich**  
(*Lebedev Inst., Moscow*)  
**Large-scale structure of the Universe.**  
**Analytical theory and numerical simulation**

## Tuesday, April 12

9.00-9.40 **T.M.Rice**  
(*Swiss Federal Inst. of Technology, Zurich*)  
**Resonant valence bond theory and its**  
**application to high temperature**  
**superconductors**

9.40-10.20 **I.Dremin**  
(*Lebedev Inst., Moscow*)  
**A.Kaidalov**  
(*ITEP, Moscow*)  
**Quantum chromodynamics and**  
**phenomenology of strong interactions**

10.20-11.00 **Yu.Parijskij**  
(*Special Astrophysical Observatory, N.Arkhыз*)  
**Sakharov oscillations: theory and**  
**observations**

## Wednesday, April 13

9.40-10.20 **M.Vysotsky**  
(*ITEP, Moscow*)  
**Electroweak Interactions**

10.20-11.00 **V.Mukhanov**  
(*Univ. of Muenchen*)  
**How robust are the predictions of inflation?**

## Thursday, April 14

9.00-9.40 **N.Krasnikov**  
(*Inst. for Nuclear Research, Moscow*)  
**V.Matveev**  
(*Inst. for Nuclear Research, Moscow*)  
**Search for new physics at large hadron collider**

9.40-10.20 **A.Slavnov**  
(*Steklov Inst., Moscow*)  
**Noncommutative field theories in high energy physics**

10.20-11.00 **I.Sokolov**  
(*Humboldt Univ., Berlin*)  
**Anomalous diffusion and fractional diffusion equations**

## Friday, April 15

- 9.00-9.40     **A.Pruisken**  
(*Univ. of Amsterdam*)  
**Quantum criticality and super universality in  
the quantum Hall regime**
- 9.40-10.20   **J.Maldacena**  
(*Inst. for Advanced Study, Princeton*)  
**QCD, strings and black holes: the large N  
limit of field theories and gravity**
- 10.20-11.00   **M.Staudacher**  
(*Max Planck Inst. for Gravitational Phys., Golm*)  
**Integrable quantum spin chains and the  
gauge/string correspondence**

## Saturday, April 16

- 11.30-12.10   **W.Unruh**  
(*Univ. of British Columbia, Vancouver*)  
**Dumb holes and the origin of black hole  
thermal radiation**
- 12.10-12.50   **L.Randall**  
(*Harvard Univ.*)  
**Relaxing to three dimensions of space**



# Sectional Talks

# Astrophysics

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## Monday, April 11

- 11.30-12.10 **A.Fridman**  
*(Inst. of Astronomy, Moscow)*  
**Experimental and observational detection of over-reflection instability on the rotating shallow water and in astrophysical disks**
- 12.10-12.50 **I.Novikov**  
*(Niels Bohr Inst., Copenhagen & Astro Space Center, Lebedev Inst., Moscow)*  
**The internal structure of black hole**
- 12.50-13.30 **A.Zasov**  
*(Sternberg Astronomical Inst., Moscow)*  
**Dark mass in disk galaxies: a problem of estimation**
- 15.00-15.30 **E.Vasiliev**  
*(Lebedev Inst., Moscow)*  
**Dark matter absorption by a supermassive black hole at the Galactic center: role of boundary conditions**
- 15.30-16.00 **V.Dokuchaev**  
*(Inst. for Nuclear Research, Moscow)*  
**Phantom energy accretion onto black hole**

16.00-16.30 **O.Tsupko**  
(*Space Research Inst., Moscow*)  
**Approximate dynamics of dark matter  
ellipsoid in large-scale structure formation of  
the Universe**

## **Tuesday, April 12**

11.30-12.10 **A.Doroshkevich**  
(*Astro Space Center, Lebedev Inst., Moscow*)  
**Statistical characteristics of observed Ly-  
alpha forest and the shape of initial power  
spectrum**

12.10-12.50 **V.Lukash**  
(*Astro Space Center, Lebedev Inst., Moscow*)  
**Puzzles and problems of standard  
cosmological model**

12.50-13.30 **D.Kazakov**  
(*JINR, Dubna*)  
**First evidence for Galactic gamma-rays from  
dark matter annihilation**



## Wednesday, April 13

- 11.30-12.10 **L.Zelenyi**  
(*Space Research Inst., Moscow*)  
**Plasma processes in laminar and turbulent current sheets**
- 12.10-12.50 **J.Truemper**  
(*Max Planck Inst. for Extraterrestrial Phys., Garching*)  
**The equation of state at supernuclear densities - results of recent astronomical observations**
- 12.50-13.30 **Yu.Gnedin**  
(*Pulkovo Observatory, St.Petersburg*)  
**Magnetic fields of supermassive black holes: current status of the observations of quasars and active galactic nuclei**
- 15.00-15.30 **B.Somov**  
(*Sternberg Astronomical Inst., Moscow*)  
**Magnetic reconnection of solar flares: current state of the theory of S.I.Syrovatskii**
- 15.30-16.00 **S.Bogovalov**  
(*Moscow Engin.Phys.Inst.*)  
**Nature of the torus and jet-like features in the central parts of plerions**

- 16.00-16.30 **V.Beskin**  
(*Lebedev Inst., Moscow*)  
**Effective particle acceleration in the parabolic magnetic field**
- 17.00-17.30 **D.Yakovlev**  
(*Ioffe Inst., St.Petersburg*)  
**Nonequilibrium weak-interaction processes in neutron stars**
- 17.30-18.00 **Yu.Shibanov**  
(*Ioffe Inst., St.Petersburg*)  
**Optical observations of radio pulsars**
- 18.00-18.30 **A.Timokhin**  
(*Sternberg Astronomical Inst., Moscow*)  
**Could we see oscillations of the neutron star after the glitch in pulsar?**

## **Thursday, April 14**

- 11.30-12.10 **I.Toptygin**  
(*S.-Petersburg State Polytech.Univ.*)  
**Magnetic fields, turbulence, and particle acceleration in supernova remnants**
- 12.10-12.50 **V.Kocharovsky**  
(*Inst. of Applied Phys., N.Novgorod*)  
**Converter acceleration of the highest-energy cosmic rays**

- 12.50-13.30 **M.van Putten**  
(*Massachusetts Inst. of Tech., Cambridge*)  
**Triples: gravitational wave bursts in GRB-supernovae as sources for LIGO and Virgo**
- 15.00-15.30 **F.Pegoraro**  
(*Univ. of Pisa*)  
**Exploring high-energy physics with laser-driven proton beams**
- 15.30-16.00 **V.Dogiel**  
(*Lebedev Inst., Moscow*)  
**Particle acceleration by plasma waves in the interstellar and intracluster media (theory and observational effects)**
- 16.00-16.30 **E.Waxman**  
(*Weizmann Inst., Rehovot*)  
**Extra-galactic sources of high-energy neutrinos**
- 17.00-17.30 **V.Chechetkin**  
(*Keldysh Inst. of Applied Math., Moscow*)  
**Dynamics of supernova explosion**
- 17.30-18.00 **K.Postnov**  
(*Sternberg Astronomical Inst., Moscow*)  
**Cosmic gamma-ray bursts: do we observe the formation of black hole?**

18.00-18.30 **M.Sazhin**  
(*Sternberg Astronomical Inst., Moscow*)  
**Probing of the nature of double sources in  
vicinity of the CSL-1**

## **Friday, April 15**

11.30-12.10 **A.Cherepashchuk**  
(*Sternberg Astronomical Inst., Moscow*)  
**Black hole demography**

12.10-12.50 **I.Okamoto**  
(*Nat. Astronomical Observatory of Japan,  
Mitaka*)  
**Electromagnetic extraction of energy from  
Kerr black hole**

12.50-13.30 **A.Levinson**  
(*Tel Aviv Univ.*)  
**Energy extraction from Kerr black hole: an  
ultimate power source in the Universe?**

15.00-15.30 **V.Semenov**  
(*St.Petersburg Univ.*)  
**String mechanism for relativistic jet  
formation**

- 15.30-16.00 **A.Zakharov**  
(*ITEP, Moscow*)  
**Measuring parameters of supermassive black holes**
- 16.00-16.30 **Ya.Istomin**  
(*Lebedev Inst., Moscow*)  
**Angular momentum of supermassive black hole**
- 17.00-17.30 **V.Braginsky**  
(*Moscow State Univ.*)  
**The development of methods of quantum measurements**
- 17.30-18.00 **E.Churazov**  
(*Space Research Inst., Moscow*)  
**Ultra deep INTEGRAL observations of the Galactic center**
- 18.00-18.30 **K.Zybin**  
(*Lebedev Inst., Moscow*)  
**The growth of giant black holes**

# Quantum Field Theory with External Conditions

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**Thursday, April 14**

*11.30-12.00* **N.Narozhny**  
(*Moscow Engin.Phys.Inst.*)  
**Intense field QED**

*12.00-12.30* **S.Lebedev**  
(*Chuvash Univ., Cheboksary*)  
**The charge moving in magnetic field in a proximity to the mirror: spectrum, life-times and transition probabilities**

*12.30-13.00* **A.Shabad**  
(*Lebedev Inst., Moscow*)  
**Black-hole concept of apoint-like nucleus with supercritical charge**

*13.00-13.30* **A.Abriskosov, Jr.**  
(*ITEP, Moscow*)  
**Electronic spectrum and tunnelling in coaxial nanotubes**

- 15.00-15.30 **M.Bordag**  
(*Leipzig Univ.*)  
**Spectrum of the gluon polarization operator  
in a chromomagnetic field**
- 15.30-16.00 **V.Nesterenko**  
(*JINR, Dubna*)  
**Spectral geometry and open systems**
- 16.30-16.30 **V.Popov**  
(*ITEP, Moscow*)  
**On Feynman method of disentangling of  
noncommuting operators**
- 17.00-17.30 **V.Baier**  
(*Budker Inst. of Nuclear Phys., Novosibirsk*)  
**Coherent and incoherent pair creation by a  
photon in oriented single crystal**
- 17.30-18.00 **V.Skalozub**  
(*Dnepropetrovsk Univ.*)  
**Signals of a heavy  $Z'$  gauge boson in the  
Bhabha scattering process**
- 18.00-18.30 **V.Vanyashin**  
(*Dnepropetrovsk Univ.*)  
**Axion emission by transverse plasma photons**

# Superstrings and Higher Spin Gauge Theory

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## Monday, April 11

- 11.30-12.00 **C.Hull**  
(*Imperial College, London*)  
**Non geometric string backgrounds**
- 12.00-12.30 **K.Stelle**  
(*Imperial College, London*)  
**Stability of Horava-Witten spacetimes**
- 12.30-13.00 **I.Arefeva**  
(*Steklov Inst., Moscow*)  
**D-brane decay in superstring field theory and models of cosmological dark energy**
- 13.00-13.30 **B.Pioline**  
(*LPTHE, Univ. of Paris*)  
**Exact degeneracies of small black holes and the topological string amplitude**
- 15.00-15.30 **A.Belavin**  
(*Landau Inst., Moscow*)  
**Minimal Liouville gravity**



15.30-16.00 **P.West**  
(*King's College London*)  
**Symmetries of M theory**

16.00-16.30 **F.Englert**  
(*Univ. Libre de Bruxelles*)  
**Extended gravity and M-theories**

## **Tuesday, April 12**

11.30-12.00 **H.Kawai**  
(*Kyoto Univ.*)  
**Diffeomorphism and local Lorentz invariance  
in matrix model**

12.00-12.30 **R.Mkrtchyan**  
(*Yerevan Physics Inst.*)  
**On a E11 hypothesis**

12.30-13.00 **D.Sorokin**  
(*Kharkov Inst. for Theor.Physics & Padova  
Univ.*)  
**Dirac on M-branes with fluxes**

13.00-13.30 **G.Papadopoulos**  
(*King's College, Univ. of London*)  
**The spinorial geometry of supersymmetric  
backgrounds**

## Wednesday, April 13

- 15.00-15.30 **V.Rychkov**  
(Univ. of Amsterdam)  
**Free fermion droplets and the half-BPS sector of AdS/CFT**
- 15.30-16.00 **O.Andreev**  
(Humboldt-Univ., Berlin & Landau Inst., Moscow)  
**Regge behavior in gauge/string duality**
- 16.00-16.30 **T.Matsuo**  
(Inst. of Phys. and Chem. Research, Wako, Saitama)  
**String interpretation for finite N Yang-Mills theory in two-dimensions**
- 17.00-17.30 **A.Sorin**  
(JINR, Dubna)  
**Hamiltonian structures of fermionic two-dimensional Toda lattice hierarchies**
- 17.30-18.00 **A.Losev**  
(ITEP, Moscow)  
**Strings in the "infinite-metric" backgrounds**

18.00-18.30 **I.Tipunin**  
(*Lebedev Inst., Moscow*)  
**Verlinde formula in logarithmic conformal field theories and a modular group action in centers of quantum groups**

## Thursday, April 14

11.30-12.00 **P.Sundell**  
(*Uppsala Univ.*)  
**On higher spins with a strong  $Sp(2, \mathbb{R})$  condition**

12.00-12.30 **Yu.Zinoviev**  
(*IHEP, Protvino*)  
**On dual formulations for massive tensor fields**

12.30-13.00 **R.Manvelyan**  
(*Yerevan Physics Inst., & Tech.Univ. of Kaiserslautern*)  
**The off-shell behaviour of propagators and the Goldstone field in higher spin gauge theory on  $AdS_{d+1}$  space**

13.00-13.30 **M.Vasiliev**  
(*Lebedev Inst., Moscow*)  
**Unfolded formulation of relativistic dynamical systems**

- 15.00-15.30 **I.Bandos**  
(*Valencia Univ. & Kharkov Inst. of Physics and Technology*)  
**On BPS preons, supergravity and higher spin theories**
- 15.30-16.00 **X.Bekaert**  
(*IHES, Bures-sur-Yvette*)  
**Higher spin gauge fields and tensorial space**
- 16.00-16.30 **P.de Medeiros**  
(*Univ. of Michigan*)  
**Non-associative gauge theory and higher spin interactions**
- 17.00-17.30 **V.Krykhtin**  
(*Tomsk Polytech.Univ.*)  
**BRST approach to Lagrangian construction for fermionic massless higher spin fields**
- 17.30-18.00 **K.Alkalaev**  
(*Lebedev Inst., Moscow*)  
**The frame-like formulation of AdS(d) mixed-symmetry fields**
- 18.00-18.30 **O.Shaynkman**  
(*Lebedev Inst., Moscow*)  
**Lagrangian formulation for free mixed-symmetry bosonic gauge fields in AdS(d)**

## Friday, April 15

- 11.30-12.00 **S.Gukov**  
(*Harvard Univ.*)  
**Topological M-theory**
- 12.00-12.30 **B.Julia**  
(*Ecole Normale Superieure, Paris*)  
**Towards dual gravity**
- 12.30-13.00 **P.Vanhove**  
(*CEA/Saclay*)  
**Pure spinors and M-theory**
- 13.00-13.30 **D.Galtsov**  
(*Moscow State Univ.*)  
**D-instantons and Supergravity Domain Walls reexamined**
- 15.00-15.30 **V.Dobrev**  
(*Inst. of Nuclear Research and Nuclear Energy, Sofia*)  
**Characters of D=4 conformal supersymmetry**
- 15.30-16.00 **A.Mironov**  
(*Lebedev Inst., Moscow*)  
**Matrix integrals and loop equations: modern views**

- 16.00-16.30 **L.Chekhov**  
(*Keldysh Inst. of Applied Math., Moscow*)  
**AdS<sub>3</sub>/CFT<sub>2</sub> on torus in the sum over geometries**
- 17.00-17.30 **A.Galajinsky**  
(*Tomsk Polytechnic Univ.*)  
**Witten-Dijkgraaf-Verlinde-Verlinde equation and N=4 superconformal Calogero model**
- 17.30-18.00 **V.Ivashchuk**  
(*Center for Gravitation and Fundamental Metrology, Moscow*)  
**On composite S-brane solutions**
- 18.00-18.30 **A.Koshelev**  
(*Steklov Inst., Moscow*)  
**Exactly solvable stringy inspired phantom model**

## **Saturday, April 16**

- 9.00-9.30 **Yu.Makeenko**  
(*ITEP, Moscow*)  
**Cusped Wilson loops and the string/gauge correspondence**
- 9.30-10.00 **M.Staudacher**  
(*Max Planck Inst. for Gravitational Phys., Golm*)  
**The factorized S-Matrix of CFT/AdS**

10.00-10.30 **A.Tseytlin**  
(*Ohio State Univ. & Imperial College, London*)  
**On the spectrum of strings in  $AdS_5 \times S^5$  and  
gauge theory - string theory duality**

10.30-11.00 **J.Maldacena**  
(*Inst. for Advanced Study, Princeton*)  
**Gravity duals of field theories with  $U(1) \times$   
 $U(1)$  symmetry**

# Quantum gravity and cosmology

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## Monday, April 11

- 11.30-12.00* **A.Starobinsky**  
(*Landau Inst., Moscow*)  
**Primordial inhomogeneities in the Universe:  
the present status**
- 12.00-12.30* **G.Venturi**  
(*Bologna Univ. & INFN, Bologna*)  
**Improved WKB analysis of cosmological  
perturbations**
- 12.30-13.00* **A.Kamenshchik**  
(*Univ. of Insubria, Como & Landau Inst.,  
Moscow*)  
**Tachyons, scalar fields, and cosmology**
- 13.00-13.30* **M.Katanaev**  
(*Steklov Inst., Moscow*)  
**Two-dimensional gravity: integrability and  
global solutions**



- 15.00-15.30 **V.Frolov**  
(Univ. of Alberta)  
**Black holes in a spacetime with large extra dimensions**
- 15.30-16.00 **D.Fursaev**  
(JINR, Dubna)  
**Gravitational field of a spinning radiation beam pulse in higher dimensions**
- 16.00-16.30 **TBA**

## **Tuesday, April 12**

*Session dedicated to the memory of Bryce DeWitt*

- 11.30-12.00 **A.Barvinsky**  
(Lebedev Inst., Moscow)  
**The Gospel according to DeWitt revisited: quantum effective action in spacetimes with boundaries and braneworld gravity models**
- 12.00-12.30 **R.Woodard**  
(Univ. of Florida)  
**Stochastic formulation of inflationary quantum gravity**
- 12.30-13.00 **W.Unruh**  
(Univ. of British Columbia, Vancouver)  
**Measurement and quantum gravity**

13.00-13.30 **V.Mukhanov**  
(Univ. of Muenchen)  
**B.DeWitt on interpretation of quantum  
mechanics**

## **Wednesday, April 13**

11.30-12.00 **V.Rubakov**  
(Inst. for Nuclear Research, Moscow)  
**Lorentz-violation and generation of  
perturbations at inflation**

12.00-12.30 **S.Dubovsky**  
(CERN, Geneva & Inst. for Nuclear Research,  
Moscow)  
**Lorentz-violating massive gravity**

12.30-13.00 **C.Deffayet**  
(Inst. of Astrophysics, Paris)  
**Cosmology and cosmological vDVZ  
(dis)continuity of brane-induced gravity**

13.00-13.30 **S.Sibiryakov**  
(Inst. for Nuclear Research, Moscow)  
**Ultra-large distance modification of gravity  
from Lorentz symmetry breaking at the Plank  
scale**

15.00-15.30 **D.Langlois**  
(Inst. of Astrophysics, Paris)  
**Gravitation and cosmology in brane-worlds**

- 15.30-16.00 **A.Filippov**  
(*JINR, Dubna*)  
**Dimensional reduction of supergravities  
producing black holes and cosmologies**
- 16.00-16.30 **B.Altshuler**  
(*Lebedev Inst., Moscow*)  
**Calculation of large mass hierarchy from  
number of extra dimensions**
- 17.00-17.30 **A.Nikishov**  
(*Lebedev Inst., Moscow*)  
**Problems in field theoretical approach to  
gravitation**
- 17.30-18.00 **B.Meierovich**  
(*Kapitza Inst., Moscow*)  
**Gravitating global topological defects in extra  
dimensions**
- 18.00-18.30 **TBA**

## **Friday, April 15**

- 11.30-12.00 **A.Albrecht**  
(*Univ. of California, Davis*)  
**Theories of cosmic initial conditions**

- 12.00-12.30 **F.Finelli**  
(*Inst. of Space Astrophysics & Cosmic Physics, Bologna*)  
**Recent results on the generation of quantum fluctuations during Inflation**
- 12.30-13.00 **T.Hertog**  
(*Univ. of California, Santa Barbara*)  
**Holographic cosmology**
- 13.00-13.30 **A.Toporensky**  
(*Sternberg Astronomical Inst., Moscow*)  
**DeSitter stability in string gravity with higher order curvature corrections**
- 15.00-15.30 **I.Khriplovich**  
(*Budker Inst. of Nuclear Phys., Novosibirsk*)  
**Quantized black holes. Horizon and mass spectrum, radiation intensity**
- 15.30-16.00 **S.Solodukhin**  
(*Univ. of Muenchen*)  
**Relaxation and unitarity in three-dimensional black hole**
- 16.00-16.30 **V.Berezin**  
(*Inst. for Nuclear Research, Moscow*)  
**Black hole thermodynamics without a black hole?**

# Quantum Field Theory

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## Monday, April 11

- 15.00-15.30 **D.Nesterov**  
(*Lebedev Inst., Moscow*)  
**Late-time asymptotics of the heat kernel and new nonlocal effective action**
- 15.30-16.00 **K.Ohashi**  
(*Tokyo Inst. of Technology*)  
**Solitons in the Higgs phase and their moduli spaces**
- 16.00-16.30 **K.Konishi**  
(*Univ. of Pisa*)  
**Nonabelian monopoles via monopole-vortex systems**

## Wednesday, April 13

- 11.30-12.00 **Tureanu A.**  
(*Helsinki Univ. & Helsinki Inst. of Phys.*)  
**Noncommutative quantum field theories: new space-time symmetry and exact results**

- 12.00-12.30 **M.Olshanetsky**  
(*ITEP, Moscow*)  
**Sklyanin algebra from topological field theory**
- 12.30-13.00 **P.Lavrov**  
(*Tomsk Pedag.Univ.*)  
**Fedosov supermanifolds**
- 13.00-13.30 **B.Zupnik**  
(*JINR, Dubna*)  
**Nonanticommutative deformations of  
hypermultiplets**

## **Friday, April 15**

- 11.30-12.00 **S.Konstein**  
(*Lebedev Inst., Moscow*)  
**Cohomologies and deformations of Poisson  
superalgebras**
- 12.00-12.30 **M.Grigoriev**  
(*Lebedev Inst., Moscow*)  
**Consistent reductions of gauge theories**
- 12.30-13.00 **M.Volkov**  
(*Univ. of Tours*)  
**Resonant excitations of the 't Hooft-Polyakov  
monopole**

- 13.00-13.30 **S.Lyakhovich**  
(*Tomsk Univ.*)  
**BRST quantization without Lagrangian and Hamiltonian**
- 15.00-15.30 **A.Sharapov**  
(*Tomsk Univ.*)  
**Global invariants of gauge systems**
- 15.30-16.00 **I.Volovich**  
(*Steklov Inst., Moscow*)  
**Disentanglement in quantum field theory and Bell's experiments**
- 16.00-16.30 **V.Manko**  
(*Lebedev Inst., Moscow*)  
**Entanglement and tomographic entropy of quantum states in probability representation of quantum mechanics**
- 17.00-17.30 **V.Zhotikov**  
(*Moscow Inst. of Physics and Technology*)  
**Relativistic invariance and existence of fundamental length**
- 17.30-18.00 **V.Neznamov**  
(*NRIEP, Sarov*)  
**Standard model in Foldy-Wouthuysen representation**
- 18.00-18.30 **TBA**

# Strongly Correlated Electrons, Quantum Liquids and Quantum Coherence

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**Monday, April 11**

- 11.30-12.00* **Kravtsov V.**  
*(ICTP, Trieste)*  
**Role of interaction on dynamic localization in  
a quantum dot**
- 12.00-12.30* **A.Zaikin**  
*(Lebedev Inst., Moscow & Forschungszentrum,  
Karlsruhe)*  
**Electron transport, fluctuations and electron-  
electron interactions in mesoscopic conductors**
- 12.30-13.00* **M.Mensky**  
*(Lebedev Inst., Moscow)*  
**Dissipation of quantum systems in a model-  
independent approach**
- 13.00-13.30* **A.Ivanov**  
*(Cardiff Univ.)*  
**Bipolariton eigenstates for a coherent  
excitonic molecule**



- 15.00-15.30 **Y.Avishai**  
(*Ben-Gurion Univ.*)  
**Keldysh treatment of a spin-boson  
Hamiltonian at large  $S$**
- 15.30-16.00 **A.Finkelstein**  
(*Weizmann Inst., Rehovot*)  
**Spintronics without magnets: spin-optics**
- 16.00-16.30 **Kikoin K.**  
(*Ben-Gurion Univ.*)  
**Dynamical symmetries in nanophysics**

## **Tuesday, April 12**

- 11.30-12.00 **M.Kulic**  
(*Univ. of Frankfurt*)  
**Forward scattering peak in the electron-  
phonon interaction of high-temperature-  
superconductors**
- 12.00-12.30 **M.Sadovskii**  
(*Inst. of Electrophysics, Ekaterinburg*)  
**Pseudogaps in strongly correlated metals**
- 12.30-13.00 **E.Maksimov**  
(*Lebedev Inst., Moscow*)  
**Optical sum rules in the normal and  
superconducting states of metals**

13.00-13.30 **K.Efetov**  
(*Ruhr-Univ. Bochum*)  
**Exotic properties of superconductor-ferromagnet structures**

## **Wednesday, April 13**

11.30-12.00 **P.Fulde**  
(*Max Planck Inst. for the Phys. of Complex Systems, Dresden*)  
**Fractional charges in frustrated lattices**

12.00-12.30 **M.Feigelman**  
(*Landau Inst., Moscow*)  
**Theory of superconductive pairing near the mobility edge**

12.30-13.00 **A.Tsvelik**  
(*Brookhaven National Lab.*)  
**Between one and higher dimensions: doped spin ladders**

13.00-13.30 **L.Glazman**  
(*Univ. of Minnesota*)  
**Coulomb drag between quantum wires: beyond Tomonaga-Luttinger model**

## Thursday, April 14

- 15.00-15.30 **P.Woelfle**  
(Univ. of Karlsruhe)  
**Nonequilibrium electron transport through quantum dots in the Kondo regime**
- 15.30-16.00 **Yu.Lozovik**  
(Spectroscopy Inst., Troitsk)  
**Strongly correlated phases and coherent phenomena in electron and electron-hole systems in nanostructures**
- 16.00-16.30 **M.Kagan**  
(Kapitza Inst., Moscow)  
**Composite fermions, trios and quarters in Fermi-Bose mixture**
- 17.00-17.30 **S.Brazovski**  
(Univ. Paris-Sud)  
**Topological excitations of correlated electronic states**
- 17.30-18.00 **P.Arseev**  
(Lebedev Inst., Moscow)  
**Effects of electron-phonon interaction in tunneling processes in nanostructures**
- 18.00-18.30 **TBA**

## Friday, April 15

- 11.30-12.00 **D.Vollhardt**  
(Univ. of Augsburg)  
**Theory of strongly correlated electron systems: from simple models to real materials**
- 12.00-12.30 **I.Nekrasov**  
(Inst. of Metal Physics, Ekaterinburg)  
**Full orbital calculation scheme for materials with strongly correlated electrons**
- 12.30-13.00 **S.Savrasov**  
(New Jersey Inst. of Technology)  
**Plutonium as strongly correlated metal**
- 13.00-13.30 **S.Ovchinnikov**  
(Inst. of Physics, Krasnoyarsk)  
**Electronic structure and electron-phonon interaction in copper oxides in the regime of strong electron correlations**

# High-Energy Physics

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## Tuesday, April 12

- 11.30-12.10* **D.Shirkov**  
(*JINR, Dubna*)  
**Non-power functional expansions for QCD observables at low energies**
- 12.10-12.50* **B.Ioffe**  
(*ITEP, Moscow*)  
**The modern status of QCD low energy parameters**
- 12.50-13.30* **Yu.Simonov**  
(*ITEP, Moscow*)  
**New results in the dynamics of confinement and deconfinement**

## Wednesday, April 13

- 11.30-12.00* **L.Okun**  
(*ITEP, Moscow*)  
**Formula  $E = mc^2$  in the World Year of Physics**

- 12.00-12.30 **A.Studenikin**  
(*Moscow State Univ.*)  
**Neutrino quantum states and spin light in matter**
- 12.30-13.00 **V.Novikov**  
(*ITEP, Moscow*)  
 **$K\bar{K}$  binary system in Quantum Mechanics and in Quantum Field Theory: CPT**
- 13.00-13.30 **G.Ovanesyan**  
(*Moscow Inst. of Physics and Technology*)  
**Hunting for the alpha:  $B\to\rho\rho$ ,  $B\to\rho\pi$ ,  $B\to\rho\pi$**
- 15.00-15.30 **A.Sissakian**  
(*JINR, Dubna*)  
**Reduced phase space of quantum system: example of Coulomb potential**
- 15.30-16.00 **M.Polikarpov**  
(*ITEP, Moscow*)  
**Confining fields in lattice QCD**
- 16.00-16.30 **V.Zakharov**  
(*Max Planck Inst. for Physics, Muenchen*)  
**Anderson localization in pure Yang-Mills theories**

17.00-17.30 **I.Royzen**  
(*Lebedev Inst., Moscow*)  
**Phase states of sub-hadronic matter and  
microscopic pattern of its hadrinization**

17.30-18.00 **I.Lokhtin**  
(*Skobeltsyn Inst. of Nuclear Phys., Moscow*)  
**Jet physics in ultrarelativistic heavy ion  
collisions**

18.00-18.30 **V.Kokoulina**  
(*JINR, Dubna*)  
**Multiparticle dynamics study by Gluon  
Dominance Model**

## **Thursday, April 14**

11.30-12.00 **A.Kaidalov**  
(*ITEP, Moscow*)  
**Double diffractive processes - from hadrons to  
Higgs**

12.00-12.30 **B.Ioffe**  
(*ITEP, Moscow*)  
**The pentaquark - an enigma in QCD**

12.30-13.00 **A.Likhoded**  
(*IHEP, Protvino*)  
**Power suppressed terms in inclusive heavy-  
light meson production**

- 13.00-13.30 **K.Ter-Martirosyan**  
(*ITEP, Moscow*)  
**Experimental neutrino masses, mixing angles  
for three generations, and the neutrino  
oscillations in models with gauge and left-  
right symmetries**
- 15.00-15.30 **I.Dremin**  
(*Lebedev Inst., Moscow*)  
**Soft and hard processes in QCD**
- 15.30-16.00 **V.Shevchenko**  
(*ITEP, Moscow*)  
**Casimir effect with more than one scale**
- 16.00-16.30 **A.Leonidov**  
(*Lebedev Inst., Moscow*)  
**Color glass condensate: a new paradigm for  
high energy QCD**



# Dissipative Structures in Nonlinear Dynamics

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**Wednesday, April 13**

- 15.00-15.30 **S.Kuznetsov**  
(*Inst. of RadioEngineering and Electronics,  
Saratov*)  
**Renormalization group approach in nonlinear  
dynamics - a tool for analysis of transitions to  
chaos**
- 15.30-16.00 **F.Ataullakhanov**  
(*Moscow State Univ.*)  
**New self-organization patterns in models of  
active media: a model of blood clotting as an  
example**
- 16.00-16.30 **A.Panfilov**  
(*Utrecht Univ.*)  
**Modelling in electrophysiology using  
anatomically accurate models of the heart**
- 17.00-17.30 **A.Polezhaev**  
(*Lebedev Inst., Moscow*)  
**Spatio-temporal patterns, driven by the flow  
instability**

17.30-18.00 **E.Volkov**  
(*Lebedev Inst., Moscow*)  
**Frequency-selective weak signal acceptance  
by homogeneous array of coupled relaxation  
oscillators**

18.00-18.30 **D.Sokoloff**  
(*Moscow Univ.*)  
**Intermittency in dynamo and Jacobi  
equations**

## **Thursday, April 14**

11.30-12.00 **A.Deutsch**  
(*Tech. Univ., Dresden*)  
**Cellular automaton modelling of biological  
pattern formation**

12.00-12.30 **F.Sagues**  
(*Univ. of Barselona*)  
**Deterministic vs. stochastic control of 3D  
excitation waves**

12.30-13.00 **V.Davydov**  
(*Moscow Inst. of RadioEngineering, Electronics  
& Automatics*)  
**Autowaves on curved surfaces: theory,  
simulations, experiments**

13.00-13.30 **V.Zykov**  
(*Tech.Univ., Berlin*)  
**Feedback-mediated drift of spiral waves as an  
interference pattern**