

# *General Information*

All the scientific program including the opening ceremony is held at the Lebedev Physics Institute, Leninsky Prospect, 53.

Registration desk will be open in hotel Korston

- May 16 14:00 to 18:00
- May 17 12:00 to 20:00

Also the additional registration desk in the Lebedev Institute will be available:

- May 18 8:45 to 9:15 (near Main Conference Hall)

In case of late arrival, you can register during the coffee-breaks at the Organizing Committee desk at the Lebedev Physics Institute .

The Welcome Party will be on Monday, May 18 (at Coffee-break Hall at Lebedev Institute) and the Banquet on Thursday, May 21 (the place will be announced upon registration).

Lunch (midday meal): During the Conference, lunch will be served in the restaurant of the hotel Korston, which is a 15-20 minute walk from the Lebedev Institute. Every morning, evening, and lunch time there will be shuttles to and from the Korston hotel.

	from Korston Hotel to Lebedev Inst.	from Lebedev Inst. to Korston Hotel
Monday, Tuesday, Friday	8:30, 14:10	13:10, 18:50
Wednesday, Saturday	8:30	13:10
Thursday	8:30, 14:10	13.10

Thursday, May 21; 18:40 - from Lebedev Institute to Banquet Hall

## *Sponsors of the Conference*

- Dmitry Zimin Foundation Dynasty
- Ministry of Education and Science of the Russian Federation
- Russian Academy of Sciences
- Russian Foundation for Basic Research

# *List of Sections*

## **Astrophysics**

*Astro Conference Hall*

Coordinator: Vasily Beskin

## **Superstrings and Higher-Spin Gauge Theory**

*Main Conference Hall*

Coordinators: Mikhail Vasiliev, Ruslan Metsaev

## **Quantum Field Theory**

*Tamm Conference Hall, Physics Conference Hall*

Coordinators: Igor Tyutin, Boris Voronov

## **High Energy Physics**

*Physics Conference Hall*

Coordinator: Igor Dremin

## **Quantum Gravity and Cosmology**

*Library Conference Hall*

Coordinator: Andrei Barvinsky

## **Condensed Matter Physics**

*Tamm Conference Hall*

Coordinators: Petr Arseev, Evgeny Maximov

## **Quantum Field Theory with External Conditions**

*Library Conference Hall, Tamm Conference Hall*

Coordinator: Vladimir Ritus

# *Schedule*

## **Monday, May 18**

09.00-09.20	Registration
09.20-09.45	Opening
09.45-10.30	Plenary Session
10.30-11.00	Coffee-Break
11.00-13.00	Sectional Sessions
13.00-14.30	Lunch
14.30-16.30	Sectional Sessions
16.30-17.00	Coffee-Break
17.00-18.30	Sectional Sessions
19.00	Welcome Party

## **Tuesday, May 19**

09.00-10.30	Plenary Session
10.30-11.00	Coffee-Break
11.00-13.00	Sectional Sessions
13.00-14.30	Lunch
14.30-16.30	Sectional Sessions
16.30-17.00	Coffee-Break
17.00-18.30	Sectional Sessions

## **Wednesday, May 20**

09.00-10.30	Plenary Session
10.30-11.00	Coffee-Break
11.00-13.00	Fradkin Memorial Session/Sectional Session
13.00-14.30	Lunch
15.00	Excursion

### **Thursday, May 21**

09.00-10.30 Plenary Session  
10.30-11.00 Coffee-Break  
11.00-13.00 Sectional Sessions  
13.00-14.30 Lunch  
14.30-16.30 Sectional Sessions  
16.30-17.00 Coffee-Break  
17.00-18.30 Sakharov Memorial Session  
19.00 Banquet

### **Friday, May 22**

09.00-10.30 Plenary Session  
10.30-11.00 Coffee-Break  
11.00-13.00 Sectional Sessions  
13.00-14.30 Lunch  
14.30-16.30 Sectional Sessions  
16.30-17.00 Coffee-Break  
17.00-18.30 Sectional Sessions

### **Saturday, May 23**

09.00-10.30 Sectional Sessions  
10.30-10.00 Coffee-Break  
11.00-12.30 Plenary Session  
12.30-13.00 Closing  
13.00-14.30 Lunch

# ***Public Lectures***

In conjunction with the 4th International Sakharov Conference on Physics being held in the Lebedev Institute, there will be a free public lecture, which should be of interest to a general scientific audience and to many members of the general public.

Public lecture will be held on Sunday, May 17, 2009, at 12.00. It is open to everyone and admission is free.

Lecturer:

**Chris Llewellyn-Smith**

*(ITER Council and Consultative Committee for Euratom on Fusion)*

**The Path to Fusion Power**

Public Lecture is organized and sponsored by the Dmitry Zimin Dynasty Foundation (Russia), one of the first Russian family foundations ([www.dynastyfdn.com](http://www.dynastyfdn.com)), which specializes in support and promotion of fundamental research

# ***Social program***

An excursion (free of charge) and a concert (extra cost) will be organized for all participants and accompanying persons:

## **Wednesday, 15:00-19:00**

Bus tour of Moscow historic places including visit to the Red Square and the Kremlin (departure from the hotel "Korston");

## **Friday, 19:00-21:00**

Concert of the famous bass Mikhail Svetlov (at the Lebedev Institute);

Daytime program for accompanying persons:  
(organized by 1Point MSC company)

## **Monday, 15:00-18:00**

Walking tour of Old Arbat street;

## **Tuesday, 10:00-12:00**

The Armoury Chamber of the Moscow Kremlin;

## **Tuesday, 15:00-17:30**

The Novodevichii Monastery (churches, museums);

## **Wednesday, 10:00-12:00**

Kolomenskoe Estate;

## **Thursday, 8:00-14:00**

Bus tour to Troitse-Sergieva Lavra;

## **Friday, 11:00-13:00**

The Tretyakov art Gallery.

Some changes in the schedule are possible. Detailed information and prices for participation in each day's program will be available from the Organizing committee desk during the conference.

# Monday, May 18

9.00-9.20	Registration
9.20-9.45	Openning

**Plenary**

9.45-10.30	R.Sunyaev	The Richness and Beauty of the Physics of Cosmological Recombination
10.30-11.00	Coffee-Break	

**Sectional**

	Astrophysics	Superstrings and Higher-Spin Gauge Theory
11.00-13.00	11.00 D.Breitschwerdt 11.40 V.Dogiel 12.20 Ya.Istomin	11.00 N.Beisert 11.30 H.Dorn 12.00 A.Gorsky 12.30 K.Zarembo
13.00-14.30	Lunch	
14.30-16.30	14.30 C.-M.Ko 15.10 G.Brunetti 15.50 I.Toptygin	14.30 L.Baulieu 15.00 I.Bandos 15.30 D.Sorokin 16.00 I.Samsonov
16.30-17.00	Coffee-Break	
17.00-18.30	17.00 V.Tatischeff 17.40 E.Churazov 18.20-18.40 M.Rengel	17.00 N.Boulangier 17.30 C.Iazeolla 18.00 E.Skvortsov
19.00	Welcome Party	



<b>Quantum Field Theory</b> <i>Tamm Conference Hall</i>	<b>High Energy Physics</b>	<b>Quantum Gravity and Cosmology</b>
11.00 V.Kadyshevsky	11.00 D.Kharzeev	11.00 V.Rubakov
11.30 A.Slavnov	11.30 A.Andrianov	11.40 A.Linde
12.00 G.Efimov	12.00 E.Boos	12.20 M.Sasaki
12.30 M.Olshanetsky	12.30 M.Vysotsky	
<b>Lunch</b>		
14.30 K.Bering	14.30 A.Studenikin	14.30 R.Woodard
15.00 S.Lyakhovich	15.00 V.Skalozub	15.10 I.Volovich
15.30 P.Lavrov	15.30 I.Belotelov	15.50 A.Barvinsky
16.00 M.Grigoriev	16.00 M.Volkov	
<b>Coffee-Break</b>		
17.00 A.Belavin		17.00 A.Grib
17.30 A.Semikhatov		17.30 A.Toporensky
18.00 V.Rychkov		18.00 I.Sawicki
<b>Welcome Party</b>		

# Tuesday, May 19

<b>Plenary</b>	9.00-9.45	P.Littlewood	A New Condensate of Matter and Light
	9.45-10.30	S.Giddings	Black Holes, High-Energy Scattering, and Locality
	10.30-11.00	Coffee-Break	

<b>Sectional</b>		<b>Astrophysics</b>	<b>Superstrings and Higher-Spin Gauge Theory</b>
	11.00-13.00	11.00 C.Fronsdal	11.00 C.Hull
		11.40 V.Lukash	11.30 J.de Boer
		12.20 E.Dudas	12.00 H.Samtleben
			12.30 E.Bergshoeff
	13.00-14.30	Lunch	
14.30-16.30	14.30 A.Chernin	14.30 M.Cederwall	
	15.10 Yu.Gnedin	15.00 P.Vanhove	
	15.50 I.Khriplovich	15.30 A.Marshakov	
		16.00 R.Roiban	
16.30-17.00	Coffee-Break		
17.00-18.30	17.00 V.Gurzadyan	17.00 T.McLoughlin	
	17.30 S.Odintsov	17.30 G.de Teramond	
	18.00 V.Neznamov	18.00 V.Forini	

<b>Condensed Matter Physics</b>	<b>High Energy Physics</b>	<b>Quantum Gravity and Cosmology</b>
11.00 P.Fulde	11.00 C.Llewellyn-Smith	11.00 E.Mottola
11.30 TBA	11.30 O.Teryaev	11.40 V.Frolov
12.00 Yu.Kopaev	12.00 V.Novikov	12.20 I.Aref'eva
12.30 M.Kagan	12.30 A.Kotikov	
<b>Lunch</b>		
14.30 K.Kikoin	14.30 Yu.Simonov	14.30 V.Berezin
15.00 I.Suslov	15.00 D.Diakonov	15.00 A.Sorin
15.30 K.Efetov	15.30 V.Zakharov	15.30 C.-M.Chen
16.00 A.Kamenev	16.00 M.Polikarpov	16.00 E.Babichev
<b>Coffee-Break</b>		
	<b>Quantum Field Theory</b> <i>Physics Conference Hall</i>	
17.00 Yu.Rostovtsev	17.00 G.Barnich	17.00 D.Fursaev
17.30-18.00 S.Tikhodeev	17.30 V.Spiridonov	17.30 M.Katanaev
	18.00 B.Zupnik	18.00 A.Matveev

# Wednesday, May 20

<b>Plenary</b>	9.00-9.45	B.Ovrut	The Heterotic String: From Super-Geometry to the LHC
	9.45-10.30	D.Shirkov	On Symmetry Breaking under Phase Transition
	10.30-11.00	Coffee-Break	

<b>Sectional</b>		<b>Astrophysics</b>	<b>Fradkin Memorial Session</b>
	11.00-13.00	11.00 I.Novikov 11.40 B.Coppi 12.20 A.Cherepashchuk	11.00 A.Shabad 11.30 L.Brink 12.00 A.Tseytlin 12.30 M.Vasiliev
	13.00-14.30	Lunch	
	15.00-	Excursion	



# Thursday, May 21

<b>Plenary</b>	9.00-9.45	M.Shaposhnikov	Standard Model Higgs Boson and Cosmological Inflation
	9.45-10.30	R.Venugopalan	Gluonic Matter in Collision at RHIC and the LHC
	10.30-11.00	Coffee-Break	
<b>Sectional</b>	11.00-13.00	<b>Astrophysics</b>	
		<b>Superstrings and Higher-Spin Gauge Theory</b>	
		11.00 A.Melatos	11.00 B.de Wit
		11.30 V.Beskin	11.30 K.Stelle
		12.00 D.Sobyanin	12.00 A.Van Proeyen
	12.30 A.Zakharov	12.30 G.Papadopoulos	
	13.00-14.30	Lunch	
14.30-16.30	14.30 V.Dokuchaev 15.10 D.Bisikalo 15.50 H.Sol	14.30 X.Bekaert 15.00 A.Bengtsson 15.30 D.Francia 16.00 R.Manvelyan	
16.30-17.00	Coffee-Break		
17.00-18.30	<b>Sakharov Memorial Session</b>		
19.00	17.00 B.Altshuler Banquet		

<b>Condensed Matter Physics</b>	<b>High Energy Physics</b>	<b>Quantum Gravity and Cosmology</b>
11.00 M.Sadovskii	11.00 A.Kaidalov	11.00 A.Starobinsky
11.30 M.Kulic	11.30 I.Dremin	11.40 S.Giddings
12.00 S.Ovchinnikov	12.00 B.Zakharov	12.20 A.Kamenshchik
12.30 TBA	12.30 A.Smilga	
<b>Lunch</b>		
		<b>Quantum Field Theory with External Conditions</b> <i>Library Conference Hall</i>
14.30 A.Rubtsov	14.30 A.Zarubin	14.30 S.Fulling
15.00 N.Zein	15.00 A.Zaitsev	15.00 E.Elizalde
15.30 E.Maksimov	15.30 A.Sissakian	15.30 G.Esposito
16.00 Yu.Uspenskii	16.00 M.Danilov	16.00 M.Bordag
<b>Coffee-Break</b>		
<b>Sakharov Memorial Session</b>		
17.00 B.Altshuler		
<b>Banquet</b>		

# Friday, May 22

<b>Plenary</b>	9.00-9.45	G.Arutyunov	Gauge Theories from Quantum Strings
	9.45-10.30	L.Zelenyi	Spontaneous Reconnection in Collisionless Plasma. Long Lasting Drama of Ideas
	10.30-11.00	Coffee-Break	
<b>Sectional</b>	11.00-13.00	<b>Astrophysics</b>	
		<b>Superstrings and Higher-Spin Gauge Theory</b>	
		11.00 A.Fridman	11.00 I.Klebanov
		11.40 R.Rafikov	11.30 G.Arutyunov
	12.20 D.Sokoloff	12.00 S.Frolov	
			12.30 O.Andreev
13.00-14.30	Lunch		
14.30-16.30	14.30 D.Melrose	14.30 H.Itoyama	
	15.10 V.Kocharovsky	15.00 P.Sundell	
	15.50 S.Bulanov	15.30 Yu.Zinoviev	
		16.00 A.Campoleoni	
16.30-17.00	Coffee-Break		
17.00-19.00	17.00 D.Uzdensky	17.00 I.Buchbinder	
	17.30 E.Grigorenko	17.30 V.Krykhtin	
	18.00-18.30 S.Bogovalov	18.00 A.Reshetnyak	
		18.30 V.Didenko	



<b>Condensed Matter Physics</b>	<b>High Energy Physics</b>	<b>Quantum Gravity and Cosmology</b>
11.00 A.Pruisken	11.00 B.Ioffe	11.00 B.Allen
11.30 Yu.Lozonev	11.30 R.Venugopalan	11.40 S.Sibiryakov
12.00 A.Mel'nikov	12.00 A.Leonidov	12.10 A.Vikman
12.30 TBA	12.30 I.Ginzburg	12.35 M.Mensky
<b>Lunch</b>		
	<b>Quantum Field Theory</b> <i>Physics Conference Hall</i>	
14.30 A.Zaikin	14.30 J.Lukierski	14.30 TBA
15.00 W.Belzig	15.00 D.Kazakov	15.10 A.Frolov
15.30 G.Zarand	15.30 A.Mironov	15.40 S.Vernov
16.00 TBA	16.00 A.Smilga	16.05 A.Koshelev
<b>Coffee-Break</b>		
<b>Quantum Field Theory with External Conditions</b> <i>Library Conference Hall</i>		
17.00 S.Lebedev	17.00 A.Tureanu	17.00 B.Altshuler
17.30 A.Lobanov	17.30 V.Man'ko	17.30 M.Volkov
18.00-18.30 S.Gavrilov	18.00 TBA	18.00-18.30 O.Zaslavskii

# Saturday, May 23

<b>Sectional</b>		<b>Astrophysics</b>	<b>Superstrings and Higher-Spin Gauge Theory</b>
	09.00-10.30	09.00 G.Bisnovatyι-Kogan	09.00 I.Antoniadis
		09.30 S.Nagataki	09.30 V.Kazakov
		10.00 I.Royzen	10.00 I.Bars
10.30-11.00	Coffee-Break		

<b>Plenary</b>	11.00-11.45	R.Combescot	Superfluidity in Ultracold Fermi Gases
	11.45-12.30	I.Klebanov	Strings, Branes and Gauge Theories
	12.30-13.00	Closing	
	13.00-14.30	Lunch	

<b>Quantum Field Theory with External Conditions</b> <i>Tamm Conference Hall</i>	<b>Quantum Field Theory</b> <i>Physics Conference Hall</i>	<b>Quantum Gravity and Cosmology</b>
09.00 V.Nesterenko	09.00 Yu.Makeenko	09.00 A.Filippov
09.30 V.Zhukovsky	09.30 A.Zamolodchikov	09.30 B.Meierovich
10.00 B.Kosyakov	10.00 L.Lipatov	10.00 A.Andrianov
<b>Coffee-Break</b>		

# Plenary Talks

## Monday, May 18

- 9.45-10.30    **R.Sunyaev**  
*(Space Research Inst., Moscow)*  
**The Richness and Beauty of the Physics of  
Cosmological Recombination**

## Tuesday, May 19

- 9.00-9.45    **P.Littlewood**  
*(Univ. of Cambridge)*  
**A New Condensate of Matter and Light**
- 9.45-10.30    **S.Giddings**  
*(Univ. of California, Santa Barbara)*  
**Black Holes, High-Energy Scattering, and Locality**

## Wednesday, May 20

- 9.00-9.45    **B.Ovrut**  
*(Univ. of Pennsylvania)*  
**The Heterotic String: From Super-Geometry to  
the LHC**
- 9.45-10.30    **D.Shirkov**  
*(JINR, Dubna)*  
**On Symmetry Breaking under Phase Transition**

## Thursday, May 21

- 9.00-9.45    **M.Shaposhnikov**  
*(Ecole Polytech.Fed. de Lausanne)*  
**Standard Model Higgs Boson and Cosmological  
Inflation**
- 9.45-10.30    **R.Venugopalan**  
*(Brookhaven National Lab.)*  
**Gluonic Matter in Collision at RHIC and the LHC**

## Friday, May 22

9.00-9.45     **G.Arutyunov**  
(*Utrecht Univ.*)  
**Gauge Theories from Quantum Strings**

9.45-10.30   **L.Zelenyi**  
(*Space Research Inst., Moscow*)  
**Spontaneous Reconnection in Collisionless  
Plasma. Long Lasting Drama of Ideas**

## Saturday, May 23

11.00-11.45   **R.Combescot**  
(*Ecole Normale Superieure, Paris*)  
**Superfluidity in Ultracold Fermi Gases**

11.45-12.30   **I.Klebanov**  
(*Princeton Univ.*)  
**Strings, Branes and Gauge Theories**

# Sakharov Memorial Talks

**Thursday, May 21**

17.00-18.30 **B.Altshuler**

*(Lebedev Inst., Moscow)*

**Andrei Sakharov as a Physicist in All Facets of his Life**

The main stages of life and activities of Andrei Sakharov will be covered with an emphasize on his method of achieving the desirable non-trivial results. The analysis of Sakharov's plural works and deeds shows that his method in science, in designing nuclear weapons, in defending human rights, in manufacturing world security was one and the same: he always remained a man of exact sciences, a physicist, a construction engineer, an implementor. The visible result may be the figures in the end of a formula-saturated paper or release of a victim of political repressions no matter: in any case it was a sort of scientific research, and special holism of Sakharov's mentality proposed the essentially unexpected steps to the solution which were at first often misunderstood or sometimes even shocking for his contemporaries. For an epigraph of this Talk is taken Sakharov's motto: Non-realized idea is not an idea yet. Demonstration of photos and fragments from films is included

# Fradkin Memorial Talks

**Wednesday, May 20**

- 9.00-9.30     **A.Shabad**  
*(Lebedev Inst., Moscow)*  
**Early Fradkin**
- 9.30-10.00   **L.Brink**  
*(Chalmers Univ. of Tech., Goteborg)*  
**Exceptional Symmetries in the Light-Cone Gauge  
and Possible Counter Terms**
- 10.00-10.30   **A.Tseytlin**  
*(Imperial College, London)*  
**Quantum Strings in  $AdS_5 \times S^5$**
- 10.30-11.00   **M.Vasiliev**  
*(Lebedev Inst., Moscow)*  
**Conformal Higher-Spin Gauge Theories**



# Sectional Talks

# *Astrophysics*

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## **Monday, May 18**

- 11.00-11.40    **D.Breitschwerdt**  
*(Center for Astronomy and Astrophysics, Technical Univ. Berlin)*  
**Modelling the Interstellar Medium in Star Forming Galaxies**
- 11.40-12.20    **V.Dogiel**  
*(Lebedev Inst., Moscow)*  
**Hard X-rays from the Galactic Center: Theory and Interpretation**
- 12.20-13.00    **Ya.Istomin**  
*(Lebedev Inst., Moscow)*  
**Synchrotron Radiation of a Pulsar Wind**
- 14.30-15.10    **C.-M.Ko**  
*(Inst. of Astronomy and Department of Physics, National Central Univ., Taiwan)*  
**Cosmic Ray Acceleration and Its Evidences in Heliospherical Shocks**
- 15.10-15.50    **G.Brunetti**  
*(Italian Nat. Inst. for Astrophysics, Bologna)*  
**Mergers between Clusters of Galaxies and Acceleration of High Energy Particles**
- 15.50-16.30    **I.Toptygin**  
*(S.-Petersburg State Polytechnical Univ.)*  
**Large Scale Magnetic Field Generation by Accelerated Particles in Galactic Medium**

- 17.00-17.40 **V.Tatischeff**  
*(CSNSM (CNRS/IN2P3 & Univ. Paris-Sud))*  
**Cosmic-Ray Acceleration in Radio Supernovae**
- 17.40-18.20 **E.Churazov**  
*(Max Planck Inst. for Astrophysics, Garching &  
 Space Research Inst., Moscow)*  
**AGN Feedback in Elliptical Galaxies and Clusters**
- 18.20-18.40 **M.Rengel**  
*(Max Planck Inst. for Solar System Research, Lindau)*  
**Tracing High Energy Radiation with Molecular  
 Lines Emitted by the Deeply Embedded Protostar  
 L1634**

## **Tuesday, May 19**

- 11.00-11.40 **C.Fronsdal**  
*(Univ. of California, Los Angeles)*  
**Heat and Gravitation**
- 11.40-12.20 **V.Lukash**  
*(Astro Space Center, Lebedev Inst., Moscow)*  
**Rise and fall of structure formation in the  
 Universe**
- 12.20-13.00 **E.Dudas**  
*(Ecole Polytechnique, Paris)*  
**(In)visible Z' and Dark Matter**
- 14.30-15.10 **A.Chernin**  
*(Sternberg Inst., Moscow)*  
**Dark Energy in the Local Universe**
- 15.10-15.50 **Yu.Gnedin**  
*(Central Astronomical Observatory, Pulkovo)*  
**Axion Astronomy: The Basic Stages of Axion  
 Searches by Astronomical Methods**

- 15.50-16.30 **I.Khriplovich**  
(*Budker Inst. of Nuclear Phys., Novosibirsk*)  
**Capture of Galactic Dark Matter by the Solar System**
- 17.00-17.30 **V.Gurzadyan**  
(*Yerevan Physics Inst.*)  
**CMB, Structure, Backreaction**
- 17.30-18.00 **S.Odintsov**  
(*Space Research Inst. ICE-CSIC, Barcelona*)  
**The Introduction to Modified Gravity as Dark Energy and Inflation**
- 18.00-18.30 **V.Neznamov**  
(*VNIIEF, Sarov*)  
**The Isotopic Foldy-Wouthuysen Representation as a Possible Key to Understanding the Dark Matter**

## **Wednesday, May 20**

- 11.00-11.40 **I.Novikov**  
(*Astro Space Center, Lebedev Inst., Moscow*)  
**Wormholes and Multiverse**
- 11.40-12.20 **B.Coppi**  
(*Massachusetts Inst. of Technology, Cambridge*)  
**High Energy Plasmas, General Relativity and Collective Modes in the Vicinity of Black Holes**
- 12.20-13.00 **A.Cherepashchuk**  
(*Sternberg Inst., Moscow*)  
**SS 433 - a Supercritically Accreting Microquasar with Black Hole**

## Thursday, May 21

- 11.00-11.30 **A.Melatos**  
*(Univ. of Melbourne)*  
**Gravitational waves from neutron stars: probing quantum fluids at nuclear densities**
- 11.30-12.00 **V.Beskin**  
*(Lebedev Inst., Moscow)*  
**Limiting Polarization - Missing Link in the Theory of the Pulsar Radio Emission**
- 12.00-12.30 **D.Sobyanin**  
*(Moscow Inst. of Physics and Technology)*  
**Formation of a Pulsar Magnetosphere from a Strongly Magnetized Vacuum**
- 12.30-13.00 **A.Zakharov**  
*(ITEP, Moscow)*  
**Gravitational Lensing: from Micro to Nano**
- 14.30-15.10 **V.Dokuchaev**  
*(Inst. for Nuclear Research, Moscow)*  
**Small Scale Dark Matter Clumps in the Galaxy**
- 15.10-15.50 **D.Bisikalo**  
*(Inst. of Astronomy, Moscow)*  
**3D Modeling of Accretion Disks in Close Binaries: Shocks and Density Waves**
- 15.50-16.30 **H.Sol**  
*(LUTH Observatoire de Paris-Meudon)*  
**Observing the sky at very high energy gamma-rays: current results and perspective with CTA, the Cherenkov Telescope Array**

## Friday, May 22

- 11.00-11.40 **A.Fridman**  
*(Inst. of Astronomy, Moscow)*  
**Prediction and Discovery of Extremely Strong Hydrodynamic Instabilities due to a Velocity Jump: Theory and Experiments**
- 11.40-12.20 **R.Rafikov**  
*(Princeton Univ.)*  
**Gravitationally Unstable Accretion Disks**
- 12.20-13.00 **D.Sokoloff**  
*(Moscow Univ.)*  
**Solar Cycle: New Asymptotic Solutions for Dynamo Equations**
- 14.30-15.10 **D.Melrose**  
*(Univ. of Sydney)*  
**Quantum Plasmadynamics and Quantum Fluid Models**
- 15.10-15.50 **V.Kocharovsky**  
*(Inst. of Applied Physics, N.Novgorod & Texas A&M Univ.)*  
**Self-Consistent Current Structures in Relativistic Collisionless Plasmas: Exact Solutions for Broad Classes of Particle Distributions**
- 15.50-16.30 **S.Bulanov**  
*(Kansai Photon Science Inst., Kyoto)*  
**Relativistic Laboratory Astrophysics with Relativistic Laser Plasmas**
- 17.00-17.30 **D.Uzdensky**  
*(Princeton Univ.)*  
**Magnetic Reconnection in Astrophysics**

17.30-18.00 **E.Grigorenko**  
(*Space Research Inst., Moscow*)  
**Non-Adiabatic Ion Acceleration in the Current Sheet of the Earth Magnetotail**

18.00-18.30 **S.Bogovalov**  
(*Moscow Engineering Physics Inst.*)  
**Plasma Outflow from Dissipationless Accretion Discs**

## **Saturday, May 23**

9.00-9.30 **G.Bisnovatyi-Kogan**  
(*Space Research Inst., Moscow*)  
**Gamma Ray Bursts, Soft Gamma Repeaters, and Magnetars**

9.30-10.00 **S.Nagataki**  
(*Yukawa Inst. for Theoretical Physics, Kyoto Univ.*)  
**Toward Understanding GRB-Supernova Connection and Central Engine of Long GRB**

10.00-10.30 **I.Royzen**  
(*Lebedev Inst., Moscow*)  
**QCD Against Black Holes**

# *Superstrings and Higher-Spin Gauge Theory*

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## **Monday, May 18**

- 11.00-11.30    **N.Beisert**  
*(Max Planck Inst. for Gravitational Phys., Golm)*  
**Dual Superconformal Symmetry and Integrability  
in  $AdS/CFT$**
- 11.30-12.00    **H.Dorn**  
*(Humboldt Univ. Berlin)*  
**On Timelike and Spacelike Minimal Surfaces in  
 $AdS_n$  and the Alday-Maldacena Conjecture**
- 12.00-12.30    **A.Gorsky**  
*(ITEP, Moscow)*  
**Quantum Geometry of the Momentum Space and  
Amplitudes in  $N = 4$  SYM Theory**
- 12.30-13.00    **K.Zarembo**  
*(Ecole Normale Superieure, Paris)*  
**Integrability in Superconformal Chern-Simons  
Theory and  $AdS_4/CFT_3$**
- 14.30-15.00    **L.Baulieu**  
*(LPTHE, Univ. Paris VI)*  
**Soft Breaking of BRST Invariance for Introducing  
Non-Perturbative Infrared Effects in a Local and  
Renormalizable Way**
- 15.00-15.30    **I.Bandos**  
*(Ikerbasque, Basque Country Univ.)*  
**SDiff Invariant Bagger-Lambert-Gustavsson  
Model and Its  $N = 8$  Superspace Formulation(s)**



- 15.30-16.00 **D.Sorokin**  
*(INFN, Padova)*  
**Type IIA String in  $AdS_4 \times CP^3$  Superspace**
- 16.00-16.30 **I.Samsonov**  
*(Tomsk Polytechnic Univ.)*  
 **$N = 3$  Superfield Formulation of the ABJM and  
 BLG Models**
- 17.00-17.30 **N.Boulanger**  
*(Sc.Normale Superiore, Pisa)*  
**The Unfolding of General Tensor Fields in  $AdS_d$**
- 17.30-18.00 **C.Iazeolla**  
*(Sc.Normale Superiore, Pisa)*  
**A Fibre Approach to Harmonic Analysis of  
 Unfolded Higher-Spin Field Equations**
- 18.00-18.30 **E.Skvortsov**  
*(Lebedev Inst., Moscow)*  
**Gauge Fields in (anti)-de Sitter Space and  
 Connections of its Symmetry Algebra**

## Tuesday, May 19

- 11.00-11.30 **C.Hull**  
*(Imperial College, London)*  
**Double Field Theory, String Theory and Duality**
- 11.30-12.00 **J.de Boer**  
*(Inst. Theoretical Phys., Amsterdam)*  
**Macroscopic Quantum Effects near Black Holes**
- 12.00-12.30 **H.Samtleben**  
*(Univ. of Lyon)*  
**Tensor Hierarchies and the Trombone**

- 12.30-13.00 **E.Bergshoeff**  
*(Univ. of Groningen)*  
**A New Massive Gravity Theory in Three Dimensions**
- 14.30-15.00 **M.Cederwall**  
*(Chalmers Univ. of Tech., Goteborg)*  
**Operators on Pure Spinor Spaces**
- 15.00-15.30 **P.Vanhove**  
*(IHES & Inst. Physique Theor., CEA-Saclay)*  
**Simplicity in the Structure of  $N = 8$  Supergravity Amplitudes**
- 15.30-16.00 **A.Marshakov**  
*(Lebedev Inst., Moscow & ITEP, Moscow)*  
**TBA**
- 16.00-16.30 **R.Roiban**  
*(Pennsylvania State Univ.)*  
**Scattering Amplitudes in  $N = 4$  Super-Yang-Mills and  $N = 8$  Supergravity**
- 17.00-17.30 **T.McLoughlin**  
*(Max Planck Inst. for Gravitational Phys., Golm)*  
**Scattering Amplitudes in Supersymmetric Chern-Simons Matter Theories**
- 17.30-18.00 **G.de Teramond**  
*(Univ. of Costa Rica)*  
**Light-Front Holography and Gauge/Gravity Duality: Applications to Hadronic Physics**
- 18.00-18.30 **V.Forini**  
*(Max Planck Inst. for Gravitational Phys., Golm)*  
**Reciprocity in  $AdS/CFT$**

## Thursday, May 21

- 11.00-11.30 **B.de Wit**  
*(Inst. for Theoretical Physics, Utrecht Univ.)*  
**Near-Horizon Analysis of  $D = 5$  BPS Black Holes and Rings**
- 11.30-12.00 **K.Stelle**  
*(Imperial College London)*  
**Universal BPS Structure of Stationary Supergravity Solutions**
- 12.00-12.30 **A.Van Proeyen**  
*(Katholieke Univ. Leuven)*  
**The Embedding-Tensor Formalism with Fields and Antifields**
- 12.30-13.00 **G.Papadopoulos**  
*(King's College London)*  
**Geometry Supersymmetric Backgrounds**
- 14.30-15.00 **X.Bekaert**  
*(LMPT, Univ. of Tours)*  
**On Higher Spin Interactions with a Scalar Field**
- 15.00-15.30 **A.Bengtsson**  
*(School of Engineering, Univ. of Boras)*  
**Spacetime Pictures of Higher Spin Gauge Interactions**
- 15.30-16.00 **D.Francia**  
*(AstroParticle and Cosmology, Univ. Paris VII)*  
**On Unconstrained Higher Spins of Any Symmetry**
- 16.00-16.30 **R.Manvelyan**  
*(Yerevan Physics Inst.)*  
**Off-Shell Construction of Some Trilinear Higher Spin Gauge Field Interactions**

## Friday, May 22

- 11.00-11.30 **I.Klebanov**  
(Princeton Univ.)  
 **$AdS_4/CFT_3$  Correspondence and M2-Branes**
- 11.30-12.00 **G.Arutyunov**  
(Inst. for Theoretical Physics, Utrecht Univ.)  
**Towards the Exact Spectrum of the  $AdS_5 \times S^5$  Superstring. I**
- 12.00-12.30 **S.Frolov**  
(Trinity College, Dublin)  
**Towards the Exact Spectrum of the  $AdS_5 \times S^5$  superstring. II**
- 12.30-13.00 **O.Andreev**  
(Techn.Univ., Munich & Landau Inst., Chernogolovka)  
**String Free Energy, Hagedorn and Gauge/String Duality**
- 14.30-15.00 **H.Itoyama**  
(Osaka City Univ.)  
**Deviation of  $AdS$  Minimal Area from BDS Extrapolation at a Wavy Circle**
- 15.00-15.30 **P.Sundell**  
(Scuola Normale Superiore, Pisa)  
**Geometry, Invariants and Integrability in Higher-Spin Gauge Theory**
- 15.30-16.00 **Yu.Zinoviev**  
(IHEP, Protvino)  
**On Frame-Like Gauge Invariant Formulation for Massive Mixed Symmetry Fields**

- 16.00-16.30 **A.Campoleoni**  
*(Scuola Normale Superiore and INFN, Pisa)*  
**Lagrangian Formulations for Bose and Fermi  
Higher-Spin Fields of Mixed Symmetry**
- 17.00-17.30 **I.Buchbinder**  
*(Dep. of Theoretical Physics, Tomsk State  
Pedagogical Univ.)*  
**Gauge Invariant Approach to Lagrangian  
Constructions for Higher Spin Field Theories**
- 17.30-18.00 **V.Krykhtin**  
*(Tomsk State Pedagogical Univ.)*  
**Lagrangian Formulation of Massive Fermionic  
Totally Antisymmetric Tensor Field Theory in  
 $AdS_d$  Space**
- 18.00-18.30 **A.Reshetnyak**  
*(Inst. of Strength Physics and Material Scien., Tomsk)*  
**BFV-BRST Operators and Fock Space  
Realizations of Verma Modules for Non-Linear  
Superalgebras Underlying Lagrangian  
Formulations for Mixed-Symmetry HS Fields in  
 $AdS$  Spaces**
- 18.30-19.00 **V.Didenko**  
*(Lebedev Inst., Moscow)*  
**Towards Black Holes in Higher Spin Gauge  
Theory**

## **Saturday, May 23**

- 9.00-9.30 **I.Antoniadis**  
*(CERN)*  
**Aspects of String Phenomenology**

- 9.30-10.00 **V.Kazakov**  
(*Ecole Normale Superieure & Univ. Paris VI*)  
**TBA**
- 10.00-10.30 **I.Bars**  
(*Univ. of Southern California*)  
**Super Yang-Mills Theory in 10 + 2 Dimensions  
as Another Step toward M-Theory**

# *Quantum Field Theory*

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## **Monday, May 18**

- 11.00-11.30    **V.Kadyshevsky**  
(*JINR, Dubna*)  
**On New Concept of Local Quantum Field**
- 11.30-12.00    **A.Slavnov**  
(*Steklov Inst., Moscow*)  
**A Lorentz Invariant Gauge for the Yang-Mills  
Theory Free of Gribov Ambiguity**
- 12.00-12.30    **G.Efimov**  
(*JINR, Dubna*)  
**On Bound States in QFT**
- 12.30-13.00    **M.Olshanetsky**  
(*ITEP, Moscow*)  
**Monopoles and Integrable Systems**
- 14.30-15.00    **K.Bering**  
(*Masaryk Univ., Brno*)  
**A Comparative Study of Laplacians in  
Riemannian and Antisymplectic Geometry**
- 15.00-15.30    **S.Lyakhovich**  
(*Tomsk Univ.*)  
**Gauge Symmetry of Local Non-Lagrangian  
Dynamics**
- 15.30-16.00    **P.Lavrov**  
(*Tomsk State Pedagogical Univ.*)  
**BRST Structure for Quadratically Nonlinear  
Superalgebras**

- 16.00-16.30 **M.Grigoriev**  
*(Lebedev Inst., Moscow)*  
**Local BRST Cohomology and the Inverse Problem  
of Variational Calculus for Sigma Models of  
AKSZ Type**
- 17.00-17.30 **A.Belavin**  
*(Landau Inst., Chernogolovka)*  
**2-Dimensional Minimal Gravity in Matrix Model  
and Liouville Approaches**
- 17.30-18.00 **A.Semikhatov**  
*(Lebedev Inst., Moscow)*  
**Quantum Groups and Logarithmic Conformal  
Theories: a Remarkable Duality**
- 18.00-18.30 **V.Rychkov**  
*(Scuola Normale Superiore, Pisa)*  
**The Miracle of Conformal Bootstrap in  
4-Dimensions**

## **Tuesday, May 19**

- 17.00-17.30 **G.Barnich**  
*(Universite Libre de Bruxelles & International Solvay  
Institutes)*  
**New Aspects of Duality for Electromagnetism,  
Gravitation and Higher Spin Gauge Fields**
- 17.30-18.00 **V.Spiridonov**  
*(JINR, Dubna)*  
**Superconformal Indices for  $N = 1$  Theories with  
Multiple Duals**
- 18.00-18.30 **B.Zupnik**  
*(JINR, Dubna)*  
 **$N = 6$  Chern-Simons Theory in Harmonic  
Superspace**



## Friday, May 22

- 14.30-15.00 **J.Lukierski**  
*(Univ. of Wroclaw)*  
**Galilean Conformal and Superconformal Symmetries**
- 15.00-15.30 **D.Kazakov**  
*(JINR, Dubna & ITEP, Moscow)*  
**Infrared-Finite Observables in  $N = 4$  SYM Theory**
- 15.30-16.00 **A.Mironov**  
*(Lebedev Inst., Moscow & ITEP, Moscow)*  
**Matrix Models Inspired Constructions for Topological Theories**
- 16.00-16.30 **A.Smilga**  
*(Subatech, Univ. de Nantes)*  
**Comments on Thermodynamics of Supersymmetric Matrix Models**
- 17.00-17.30 **A.Tureanu**  
*(Dep. of Physics, Univ. of Helsinki and Helsinki Inst. of Physics)*  
**Symmetries of Noncommutative Quantum Field and Gauge Theories**
- 17.30-18.00 **V.Man'ko**  
*(Lebedev Inst., Moscow)*  
**Probability Instead of Wave Function - a Review of New Theoretical and Experimental Results**

## Saturday, May 23

- 9.00-9.30     **Yu.Makeenko**  
*(ITEP, Moscow)*  
**Duality between Wilson Loops and Scattering Amplitudes in QCD**
- 9.30-10.00   **A.Zamolodchikov**  
*(Landau Inst., Chernogolovka & Rutgers Univ.)*  
**Confining Interactions in  $1 + 1$ , and 't Hooft's Model of Mesons**
- 10.00-10.30   **L.Lipatov**  
*(S.-Petersburg Nuclear Physics Inst. & Hamburg Univ.)*  
**Integrability of High Energy Scattering Amplitudes in QCD and in  $N = 4$  SUSY**

# *High Energy Physics*

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## **Monday, May 18**

- 11.00-11.30    **D.Kharzeev**  
*(Brookhaven National Lab.)*  
**Topologically Induced Local P and CP Violation in Hot QCD Matter**
- 11.30-12.00    **A.Andrianov**  
*(Univ. of Barselona, ICCUB & S.-Petersburg Univ.)*  
**Spontaneous Parity Violation in Hot and Dense Baryon Matter in QCD Motivated Hadronic Models**
- 12.00-12.30    **E.Boos**  
*(Skobeltsyn Inst. of Nuclear Physics, Moscow Univ.)*  
**Top Quark Physics**
- 12.30-13.00    **M.Vysotsky**  
*(ITEP, Moscow)*  
**Bounds on New Light Particles from High Energy and Very Small Momentum Transfer Neutron-Proton Elastic Scattering Data**
- 14.30-15.00    **A.Studenikin**  
*(Moscow Univ.)*  
**Overview of Electromagnetic Properties of Neutrinos**
- 15.00-15.30    **V.Skalozub**  
*(Dnepropetrovsk National Univ.)*  
**Renormalization Group Relations and Model-Independent Searches for Z' within the Data of LEP Experiments**

- 15.30-16.00 **I.Belotelov**  
(*JINR, Dubna*)  
**Dimuon Physics with CMS**
- 16.00-16.30 **M.Volkov**  
(*LMPT, Univ. of Tours*)  
**Superconducting Non-Abelian Strings in  
Weinberg-Salam Theory - Electroweak  
Thunderbolts**

## **Tuesday, May 19**

- 11.00-11.30 **C.Llewellyn-Smith**  
(*Oxford Univ.*)  
**The Role of Sum Rules in the Discovery of the  
Standard Model**
- 11.30-12.00 **O.Teryaev**  
(*JINR, Dubna*)  
**Sum Rules for Spin-Dependent Parton  
Distributions, Gravitational Formfactors and  
Equivalence Principle**
- 12.00-12.30 **V.Novikov**  
(*ITEP, Moscow*)  
**Radiative Corrections, New Physics and LHC**
- 12.30-13.00 **A.Kotikov**  
(*JINR, Dubna*)  
**Small-x Behavior of Parton Densities and the  
Structure Function F2 for "Frozen" and Analytic  
Strong-Coupling Constants**
- 14.30-15.00 **Yu.Simonov**  
(*ITEP, Moscow*)  
**Gluelumps and Confinement**

- 15.00-15.30 **D.Diakonov**  
(*S.-Petersburg Nuclear Physics Inst.*)  
**Confinement from Dyons**
- 15.30-16.00 **V.Zakharov**  
(*Max Planck Inst. for Physics, Muenchen*)  
**Deconfinement Phase Transition in Mirror of Symmetries**
- 16.00-16.30 **M.Polikarpov**  
(*ITEP, Moscow*)  
**Lattice Study of Chiral Symmetry Breaking in Gluodynamics with Background Magnetic Field**

## **Thursday, May 21**

- 11.00-11.30 **A.Kaidalov**  
(*ITEP, Moscow*)  
**Nuclear Shadowing and Heavy Ion Collisions**
- 11.30-12.00 **I.Dremin**  
(*Lebedev Inst., Moscow*)  
**QCD in the Nuclear Matter and Cherenkov Gluons**
- 12.00-12.30 **B.Zakharov**  
(*Landau Inst., Chernogolovka*)  
**Mass Dependence of Radiative Quark Energy Loss in QCD Matter**
- 12.30-13.00 **A.Smilga**  
(*Subatech, Univ. de Nantes*)  
**Energy Losses in Hot Plasma Revisited**
- 14.30-15.00 **A.Zarubin**  
(*CERN*)  
**LHC, CMS: Status and Plans**

- 15.00-15.30 **A.Zaitsev**  
(*IHEP, Protvino*)  
**The ATLAS Detector: Status and Plans**
- 15.30-16.00 **A.Sissakian**  
(*JINR, Dubna*)  
**The Nuclotron-Based Ion Collider Facility at the  
Joint Institute for Nuclear Research: New  
Prospects for Heavy Ion Collisions and Spin  
Physics**
- 16.00-16.30 **M.Danilov**  
(*ITEP, Moscow*)  
**Physics and Detectors at ILC**

## **Friday, May 22**

- 11.00-11.30 **B.Ioffe**  
(*ITEP, Moscow*)  
**Chirality Violating Vacuum Condensates in QCD**
- 11.30-12.00 **R.Venugopalan**  
(*Brookhaven National Lab.*)  
**High energy factorization, Long Range Rapidity  
Correlations and a Ridge in  $A + A$  collisions at  
RHIC & LHC**
- 12.00-12.30 **A.Leonidov**  
(*Lebedev Inst., Moscow*)  
**Stochastic Jet Quenching in Nuclear Collisions**
- 12.30-13.00 **I.Ginzburg**  
(*Sobolev Inst. of Mathematics, Novosibirsk*)  
**The Evolution of Vacuum States and Phase  
Transitions in 2HDM during Cooling of Universe**

# *Quantum Gravity and Cosmology*

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## **Monday, May 18**

- 11.00-11.40    **V.Rubakov**  
*(Inst. for Nuclear Research, Moscow)*  
**Towards a Consistent Theory of Massive Spin-2  
Field of Geometric Origin**
- 11.40-12.20    **A.Linde**  
*(Stanford Univ.)*  
**Inflationary Multiverse and String Theory  
Landscape**
- 12.20-13.00    **M.Sasaki**  
*(Kyoto Univ.)*  
**Non-Gaussian Curvature Perturbations from  
Multi-Brid Inflation**
- 14.30-15.10    **R.Woodard**  
*(Univ. of Florida)*  
**A Phenomenological Model of Inflation from  
Quantum Gravity**
- 15.10-15.50    **I.Volovich**  
*(Steklov Inst., Moscow)*  
**Sakharov's Extra Timelike Dimensions and  
Hawking's Chronology Protection Conjecture**
- 15.50-16.30    **A.Barvinsky**  
*(Lebedev Inst., Moscow)*  
**CFT Driven Cosmology and the DGP/CFT  
Correspondence**

- 17.00-17.30 **A.Grib**  
*(Herzen State Pedagog. Univ., S.-Petersburg)*  
**On the Hypothesis of Superheavy Particles as  
Particles of Dark Matter**
- 17.30-18.00 **A.Toporensky**  
*(Sternberg Inst., Moscow)*  
**Regular and Chaotic Dynamics in Scalar Field  
Cosmology**
- 18.00-18.30 **I.Sawicki**  
*(CCPP, New York Univ.)*  
**Dark Matter via Many Copies of the Standard  
Model**

## **Tuesday, May 19**

- 11.00-11.40 **E.Mottola**  
*(Los Alamos National Lab.)*  
**Macroscopic Quantum Effects in Gravity: Dark  
Energy and Condensate Stars**
- 11.40-12.20 **V.Frolov**  
*(Univ. of Alberta)*  
**Black Holes and Hidden Symmetries**
- 12.20-13.00 **I.Aref'eva**  
*(Steklov Inst., Moscow)*  
**Catalysis of Black Holes Production at the LHC**
- 14.30-15.00 **V.Berezin**  
*(Inst. for Nuclear Research, Moscow)*  
**Classical Analogs of Quantum Schwarzschild and  
Reissner-Nordstrom Black Holes**



- 15.00-15.30 **A.Sorin**  
*(JINR, Dubna)*  
**Supergravity Black Holes and Billiards and Liouville Integrable Structure of Dual Borel Algebras**
- 15.30-16.00 **C.-M.Chen**  
*(Nation Central Univ., Taiwan)*  
**Dilatonic Black Holes in Gauss-Bonnet Gravity**
- 16.00-16.30 **E.Babichev**  
*(AstroParticle and Cosmology, Univ. Paris VII)*  
**Spherically Symmetric Solutions in Massive Gravity and the Vainshtein Mechanism**
- 17.00-17.30 **D.Fursaev**  
*(JINR, Dubna)*  
**Quantum Entanglement, Topology, and Entropy of a Wormhole**
- 17.30-18.00 **M.Katanaev**  
*(Steklov Inst., Moscow)*  
**Inside the BTZ Black Hole**
- 18.00-18.30 **A.Matveev**  
*(Lebedev Inst., Moscow)*  
**Unfolded Description of  $AdS_4$  Black Hole**

## **Thursday, May 21**

- 11.00-11.40 **A.Starobinsky**  
*(Landau Inst., Chernogolovka)*  
**Present Status of  $f(R)$  Models of Inflation and Dark Energy**
- 11.40-12.20 **S.Giddings**  
*(Univ. of California, Santa Barbara)*  
**Think Globally - Observe Locally**

12.20-13.00 **A.Kamenshchik**  
(*Univ. of Bologna, Landau Inst., Chernogolovka*)  
**Asymptotic Freedom in Inflationary Cosmology  
with a Non-Minimally Coupled Higgs Field**

## **Friday, May 22**

11.00-11.40 **B.Allen**  
(*Albert Einstein Institute, Hannover*)  
**Gravitational Wave Astronomy**

11.40-12.10 **S.Sibiryakov**  
(*Ecole Polytechnique Federale de Lausanne & Inst.  
for Nuclear Research, Moscow*)  
**Sigma Models for Lorentz Group and  
Superluminal Propagation in Two Dimensions**

12.10-12.35 **A.Vikman**  
(*CCPP, New York Univ.*)  
**Spontaneous Lorentz Symmetry Breaking and  
Horizons**

12.35-13.00 **M.Mensky**  
(*Lebedev Inst., Moscow*)  
**Path Group and Quantum Equivalence Principle**

14.30-15.00 **A.Frolov**  
(*Simon Frazer Univ.*)  
**Primordial Non-Gaussianity from Preheating**

15.00-15.25 **S.Vernov**  
(*Skobeltsyn Inst. of Nuclear Physics, Moscow Univ.*)  
**The NEC Violation and Classical Stability**

15.25-15.50 **A.Koshelev**  
(*Univ. Libre de Bruxelles & International Solvay  
Institutes*)  
**String Field Theory Rolling Tachion, Non-Locality  
and Dark Energy**

- 17.00-17.30 **B.Altshuler**  
*(Lebedev Inst., Moscow)*  
**Unexpected Physical Contents of the Fluxbrane Throat-Like Solutions in Type IIA and Type IIB Supergravities**
- 17.30-18.00 **M.Volkov**  
*(LMPT, Univ. of Tours)*  
**Stationary Ring Solitons in Field Theory - Knots and Vortons**
- 18.00-18.30 **O.Zaslavskii**  
*(Astronomical Inst. of Kharkov National Univ.)*  
**Quasi-Black Holes**

## Saturday, May 23

- 9.00-9.30 **A.Filippov**  
*(JINR, Dubna)*  
**On Einstein - Weyl Unified Model of Gravity, Dark Energy and Dark Matter: a Brief History and the New Interpretation, Simplest Dimensional Reductions, Static and Cosmological Solutions**
- 9.30-10.00 **B.Meierovich**  
*(Kapitza Inst. for Physical Problems, Moscow)*  
**Spontaneous Symmetry Breaking in Multidimensional Gravity. Vector Order Parameter**
- 10.00-10.30 **A.Andrianov**  
*(Univ. of Barsezona, ICCUB & S.-Petersburg Univ.)*  
**Stable Phantom Cosmology Based on (C)PT Symmetry**

# *Condensed Matter Physics*

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**Tuesday, May 19**

- 11.00-11.30    **P.Fulde**  
*(Max Planck Inst. for Phys. of Complex Systems,  
Dresden & Asia Pacific Center for Theor. Physics,  
Pohang)*  
**Fractional Charges on Frustrated Lattices**
- 11.30-12.00    **Yu.Kopaev**  
*(Lebedev Inst., Moscow)*  
**Toroidal Ordered States in Solids**
- 12.00-12.30    **M.Kagan**  
*(Kapitza Inst. for Physical Problems, Moscow)*  
**Nanoscale Phase-Separation in Manganites**
- 14.30-15.00    **K.Kikoin**  
*(Ben-Gurion Univ., Tel-Aviv)*  
**Keldysh Model in Time Domain**
- 15.00-15.30    **I.Suslov**  
*(Kapitza Inst. for Physical Problems, Moscow)*  
**Is There 2D Anderson Transition?**
- 15.30-16.00    **K.Efetov**  
*(Ruhr Univ., Bochum)*  
**Transport in a Network of Josephson Junctions in  
the Insulating State**
- 16.00-16.30    **A.Kamenev**  
*(Univ. of Minnesota)*  
**Dynamic Correlation Functions of 1D Quantum  
Liquids**

17.00-17.30 **Yu.Rostovtsev**  
(*Texas A&M Univ.*)  
**Nonlinear Optics Controlled by Quantum Coherence**

17.30-18.00 **S.Tikhodeev**  
(*General Physics Inst., Moscow*)  
**Plasmon-Polariton Metamaterials**

## **Thursday, May 21**

11.00-11.30 **M.Sadovskii**  
(*Inst. of Electrophysics, Ekaterinburg*)  
**Multiple Bands - a Key to High - Temperature Superconductivity in Iron Arsenides?**

11.30-12.00 **M.Kulic**  
(*Goethe Univ. Frankfurt, Theoretical Physics*)  
**Bosonic Spectral Function and the Electron-Phonon Interaction in HTSC Cuprates**

12.00-12.30 **S.Ovchinnikov**  
(*Inst. of Physics, Krasnoyarsk & Siberian Federal Univ., Krasnoyarsk*)  
**Isotope Effect, Phonon and Magnetic Mechanism of Pairing in High- $T_c$  Cuprates in Strong Electron Correlaten Limit**

14.30-15.00 **A.Rubtsov**  
(*Moscow Univ.*)  
**Dual-Fermion Approach to Spatial Nonlocality of Correlated Electrons**

15.00-15.30 **N.Zein**  
(*Kurchatov Inst., Moscow*)  
**GW+DMFT Approach for Electronic Structure Calculations in Real Compounds**

- 15.30-16.00 **E.Maksimov**  
*(Lebedev Inst., Moscow)*  
**Peculiarities of Lattice Dynamics and the Melting  
of Alkali Metals**
- 16.00-16.30 **Yu.Uspenskii**  
*(Lebedev Inst., Moscow)*  
**First-Principles Calculations of Materials  
Perspective for Nanoelectronics**

## **Friday, May 22**

- 11.00-11.30 **A.Pruisken**  
*(Univ. of Amsterdam)*  
**TBA**
- 11.30-12.00 **Yu.Loikov**  
*(Inst. of Spectroscopy, Troitsk)*  
**Collective Properties and Coherent Phases of  
Graphene**
- 12.00-12.30 **A.Mel'nikov**  
*(Inst. for Physics of Microstructures, N.Novgorod)*  
**Localized Superconductivity and Little-Parks  
Effect in Superconductor/Ferromagnet Hybrids**
- 14.30-15.00 **A.Zaikin**  
*(Lebedev Inst., Moscow & Forschungszentrum,  
Karlsruhe)*  
**Interplay between Crossed Andreev Reflection  
and Disorder: Zero-Bias Anomaly and Charge  
Imbalance Peak**
- 15.00-15.30 **W.Belzig**  
*(Univ. of Konstanz)*  
**Time-Resolved Counting Statistics for a Quantum  
Point Contact**

15.30-16.00

**G.Zarand**

*(Budapest Univ. of Technology and Economics)*

**Geometric Spin Decay in Confined Mesoscopic  
Systems**

# *Quantum Field Theory with External Conditions*

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## **Thursday, May 21**

- 14.30-15.00    **S.Fulling**  
(*Texas A&M Univ.*)  
**Cosmological Pistons**
- 15.00-15.30    **E.Elizalde**  
(*Consejo Superior de Invest. Cientificas, Barselona*)  
**Vacuum Fluctuations and Cosmology**
- 15.30-16.00    **G.Esposito**  
(*INFN, Naples*)  
**Casimir Apparatuses in a Weak Gravitational Field**
- 16.00-16.30    **M.Bordag**  
(*Leipzig Univ.*)  
**Vacuum Energy in Quantum Field Theory - Status, Problems and Recent Advances**

## **Friday, May 22**

- 17.00-17.30    **S.Lebedev**  
(*Surgut State Univ.*)  
**Spin-Dependent Part of the Mass Shift in Quantum and Classical Electrodynamics**
- 17.30-18.00    **A.Lobanov**  
(*Dep. of Theoretical Physics, Moscow Univ.*)  
**Pure Quantum States of Particles with Rotating Spin**



18.00-18.30 **S.Gavrilov**  
*(Herzen State Pedagog. Univ., S.-Petersburg)*  
**Generalized Heisenberg-Euler Energy and Time  
Scales for Strong Electric Field Depletion**

## **Saturday, May 23**

9.00-9.30 **V.Nesterenko**  
*(JINR, Dubna)*  
**Vacuum Energy of Electromagnetic Field in the  
Background of Cosmic String of a Finite  
Thickness**

9.30-10.00 **V.Zhukovsky**  
*(Moscow State Univ.)*  
**Vacuum Polarization and Casimir Effect within  
(3 + 1)D Maxwell-Chern-Simons  
Electrodynamics with Lorentz Violation**

10.00-10.30 **B.Kosyakov**  
*(VNIIEF, Sarov)*  
**The Self-Interaction Problem in Classical  
Electrodynamics of Even-Dimensional Spacetimes**





