

**Program of the French-Russian Workshop**  
**Random Geometry and Physics**

**Steklov Mathematical Institute**

**September 8-12, 2014**

**Moscow, Russia**

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This conference is supported by Steklov Mathematical Institute, Higher School of Economics and the joint French-Russian Poncelet laboratory.

8<sup>th</sup> September, Monday

**Registration 9:15 - 9:45**

**Opening of the Conference 9:45 - 10:00**

***Morning Session***

Chairman: Stephane Ouvry

10:00 – 10:50	<b>Vincent Rivasseau</b> , LPT, Université d'Orsay, France Random Geometry and Physics, why and how?
10:50 – 11:40	<b>Igor Volovich</b> , Steklov Mathematical Institute, Russia Classical random geometry and black hole firewall problem
11:40 – 12:10	<b>Coffee break</b>
12:10 – 13:00	<b>Alain Joye</b> , Institut Fourier, Université Grenoble 1, France Spectral Transition for Random Quantum Walks on Trees
13:00 - 14:30	<b>Lunch</b>

***Afternoon Session***

Chairman: Oleg Sheinman

14:30 – 15:20	
15:20 – 16:10	<b>Mikhail Katanaev</b> , Steklov Mathematical Institute, Russia Point massive particle in General Relativity
16:10 – 16:40	<b>Coffee break</b>
16:40 – 17:00	<b>Nikolay Ilyn</b> , Steklov Mathematical Institute, Russia Geometry of random landscapes for control of a qubit
17:00 – 17:20	<b>Valerii Dryuma</b> , Institute of Mathematics and Computer Science AS RM, Moldova On solutions of the $SU(2)$ -reductions of the Yang-Mills equations
17:20 – 17:40	<b>Edvard Musaev</b> , National Research University HSE, Russia Exceptional field theory: supergravity in 5+27 dimensions

***18:00 Welcome Party***

9<sup>th</sup> September, Tuesday

***Morning Session***

Chairman: Igor Volovich

10:00 – 10:50	<b>Thomas Krajewski</b> , Centre de Physique Théorique, Aix-Marseille Université, France Analyticity results for the cumulants in a quartic matrix model
10:50 – 11:40	<b>Leonid Chekhov</b> , Steklov Mathematical Institute, Russia From chord diagrams to cohomological field theories
11:40 – 12:10	<b>Coffee break</b>
12:10 – 13:00	<b>Yan Fyodorov</b> , Queen Mary University of London, UK High-dimensional random landscapes and random matrices
13:00 - 14:30	<b>Lunch</b>

***Afternoon Session***

Chairman: Alain Joye

14:30 – 15:20	<b>Alexander Gorsky</b> , ITEP, Russia Random walks, Douglas-Kazakov phase transitions and critical phenomena in topological ensembles
15:20 – 16:10	<b>Stephane Ouvry</b> , LPTMS, France Area distribution of two-dimensional random walks and non-Hermitian Hofstadter quantum mechanics
16:10 – 16:40	<b>Coffee break</b>
16:40 – 17:00	<b>Anton Trushechkin</b> , Steklov Mathematical Institute, Russia Optimal quantum control of the Landau–Zener system by non-selective measurements
17:00 – 17:20	<b>Roman Palvelev</b> , Lomonosov Moscow State University, Russia Scattering of vortices in Abelian Higgs models on compact Riemann surfaces
17:20 – 17:40	<b>Andrey Mikhaylov</b> , Scientific and educational center of the Steklov Mathematical Institute, Russia The functional mechanics in General relativity

10<sup>th</sup> September, Wednesday

***Morning Session***

Chairman: Sergei Nechaev

10:00 – 10:50	<b>Joseph Ben Geloun</b> , Albert Einstein Institute, Max-Planck Institute for Gravitational Physics, Germany Tensorial Group Field Theory and Renormalization
10:50 – 11:40	<b>Sergei Nechaev</b> , LPTMS, France and Lebedev Physical Institute, Russia From elongated spanning trees to vicious random walks
11:40 – 12:10	<b><i>Coffee break</i></b>
12:10 – 13:00	<b>Irina Aref'eva</b> , Steklov Mathematical Institute, Russia Holographic Deformation of Conformal Correlation Functions by Ultrarelativistic Particles
13:00 - 14:30	<b><i>Lunch</i></b>

***After the lunch: Cultural program***

11<sup>th</sup> September, Thursday

***Morning Session***

Chairman: Dmitry Galtsov

10:00 – 10:50	<b>Oleg Sheinman</b> , Steklov Mathematical Institute, Russia Lax operator algebras and gradings on semi-simple Lie algebras
10:50 – 11:40	<b>Stephane Dartois</b> , University Paris 13 & Paris 11, France A Givental like decomposition formula for $T^4$ tensor model
11:40 – 12:10	<b>Coffee break</b>
12:10 – 13:00	<b>Michael Monastyrsky</b> , ITEP, Russia Hecke Graphs, Ramanujan Graphs and Generalized Duality transformations for Lattice Spin Systems
13:00 - 14:30	<b>Lunch</b>

***Afternoon Session***

Chairman: Vincent Rivasseau

14:30 – 15:20	<b>Gregory Schehr</b> , LPTMS, Université d'Orsay, France Near extreme eigenvalues and the first gap of large random matrices
15:20 – 16:10	<b>Raoul Santachiara</b> , LPTMS, Université d'Orsay, France Time-like Liouville structure constants and random conformal clusters in statistical models
16:10 – 16:40	<b>Coffee break</b>
16:40 – 17:20	<b>Vsevolod Sakbaev</b> , Moscow Institute of Physics and Technology, Russia On the application of Chernoff theorem to random walks
17:20 – 17:40	<b>Sergey Mayburov</b> , Lebedev Institute of Physics, Russia Fuzzy Topology and Geometric Quantum Formalism



12<sup>th</sup> September, Friday

***Morning Session***

Chairman: Yan Fyodorov

10:00 – 10:50	<b>Alexei Bondal</b> , Steklov Mathematical Institute, Russia and Kavli IPMU, Japan Langton's ant's period
10:50 – 11:40	<b>Roland van der Veen</b> , University of Amsterdam, Netherlands Random 3-manifolds and ideal triangulations
11:40 – 12:10	<b><i>Coffee break</i></b>
12:10 – 13:00	<b>Vasily Pestun</b> , IHES, France and ITEP, Russia Gauge theories and quantum geometry
13:00 - 14:30	<b><i>Lunch</i></b>

***Afternoon Session***

Chairman: Mikhail Katanaev

14:30 – 15:20	<b>Sergei Kozyrev</b> , Steklov Mathematical Institute, Russia Quinary lattice model of secondary structures of polymers
15:20 – 16:10	<b>Dmitry Galtsov</b> , Lomonosov Moscow State University, Russia Wormholes and instantons with NUT
16:10 – 16:40	<b><i>Coffee break</i></b>
16:40 – 17:30	<b>Thomas Fernique</b> , CNRS & University Paris 13, France Matching rules for quasicrystals
17:30 – 18:00	<b><i>Conclusion</i></b>