

# QUARKS ONLINE WORKSHOPS-2021

”Integrability, Holography,  
Higher-Spin Gravity and Strings”  
dedicated to A.D. Sakharov’s centennial

online, May 31 — June 5, 2021.

## Program

Moscow, 2021

## Monday, May 31

We use Moscow time (GMT+3). The talk times (30+5 min) include 30 min for presentations and 5 min for questions.

### **Morning Session. 9:45 Moscow Time**

Chairman: *Mikhail Vasiliev (Lebedev Physical Inst., Moscow)*

1. Mikhail Vasiliev (Lebedev Physical Inst., Moscow)  
*Opening I* — 9:45, 15 min
  
2. Sergei Kuzenko (U. of Western Australia, Perth)  
*Higher Spins Down Under* — 10:00, 30 + 5 min  
Technical break — 5 min
  
3. Mirian Tsulaia (Okinawa Inst. of Science And Technology)  
*N=1 Supersymmetric Higher Spins in Various Dimensions* — 10:40, 30 + 5 min  
Technical break — 5 min
  
4. Ioannis Papadimitriou (Korea Inst. for Advanced Study, Seoul)  
*Anomalies and Supersymmetry* — 11:20, 30 + 5 min
  
- Discussion — 35 min

### **Break. 12:30-13:30 Moscow Time**

### **Afternoon Session. 13:30 Moscow Time**

Chairman: *Dmitri Sorokin (INFN, Padua)*

1. Carlo Iazeolla (G. Marconi U., Rome)  
*Boundary conditions, orderings and Fronsdal fields in Vasiliev's higher-spin gravity* — 13:30, 30 + 5 min  
Technical break — 5 min
  
2. Karapet Mkrtchyan (Imperial College London)  
*Coloured Poincaré Algebra and Corresponding Particles* — 14:10, 30 + 5 min  
Technical break — 5 min
  
3. Euihun Joung (Kyung Hee U., Suwon)  
*Unfolding Conformal Geometry* — 14:50, 30 + 5 min
  
- Discussion — 35 min

### **Break. 16:00 -16:30 Moscow Time**

## Evening Session. 16:30 Moscow Time

Chairman: *Lars Brink (Chalmers U. of Technology, Goteborg)*

1. Boris Altshuler (Lebedev Physical Inst., Moscow) and Mikhail Vasiliev  
(Lebedev Physical Inst., Moscow)  
*Opening II. Sakharov's science achievements in modern perspective* — 16:30, 30 min  
*tive*
  2. Igor Klebanov (Princeton U.)  
*Two-Dimensional Gauge Theory with Adjoint Matter* — 17:00, 30 + 5 min  
Technical break — 5 min
  3. Edvard Musaev (Moscow Inst. of Physics and Technology)  
*Non-abelian U-dualities* — 17:40, 30 + 5 min  
Technical break — 5 min
  4. Ilya Bakhmatov (ITMP, Moscow)  
*Non-abelian fermionic T-duality* — 18:20, 30 + 5 min
- Discussion — 35 min

## Tuesday, June 1

We use Moscow time (GMT+3). The talk times (30+5 min) include 30 min for presentations and 5 min for questions.

### **Morning Session. 10:00 Moscow Time**

Chairman: *Sergei Kuzenko (U. of Western Australia, Perth)*

1. Ioseph Buchbinder (Tomsk State Pedagogical U.)  
*On a gauge-invariant deformation of a classical gauge-invariant theory* — 10:00, 30 + 5 min  
Technical break — 5 min
  2. Maxim Grigoriev (Lebedev Physical Inst., Moscow & ITMP, Moscow)  
*Interacting gauge fields from quantized spinning particles* — 10:40, 30 + 5 min  
Technical break — 5 min
  3. Anatoly Dymarsky (U. of Kentucky)  
*Quantum codes and conformal field theories* — 11:20, 30 + 5 min
- Discussion — 35 min

### **Break. 12:30-13:30 Moscow Time**

### **Afternoon Session. 13:30 Moscow Time**

Chairman: *Irina Aref'eva (Steklov Math. Inst., Moscow)*

1. Dmitry Kazakov (JINR, Dubna)  
*Non-renormalizable theories* — 13:30, 30 + 5 min  
Technical break — 5 min
  2. Evgeny Ivanov (BLTP JINR, Dubna)  
*Higher-dimensional invariants in 6D SYM theory* — 14:10, 30 + 5 min  
Technical break — 5 min
  3. Andrei Smilga (U. of Nantes)  
*Spin(7) instantons in eight dimensions* — 14:50, 30 + 5 min
- Discussion — 35 min

### **Break. 16:00 -17:00 Moscow Time**

## Evening Session. 17:00 Moscow Time

Chairman: *Igor Klebanov (Princeton U.)*

1. Glenn Barnich (Brussels U., PTM)  
*Coadjoint representation of  $BMS_4$  on celestial Riemann surfaces* — 17:00, 30 + 5 min  
Technical break — 5 min
  2. Xavier Bekaert (U. of Tours)  
*BMS higher-spin algebra and symmetries of d'Alembert equation* — 17:40, 30 + 5 min  
Technical break — 5 min
  3. Dmitry Ponomarev (ITMP, Moscow)  
*Spinor-helicity formalism in AdS and higher spins* — 18:20, 30 + 5 min
- Discussion — 35 min

## Wednesday, June 2

We use Moscow time (GMT+3). The talk times (30+5 min) include 30 min for presentations and 5 min for questions.

### **Morning Session. 10:00 Moscow Time**

Chairman: *Joseph Buchbinder (Tomsk State Pedagogical U.)*

1. Yurii Zinoviev (IHEP, Serpukhov)  
*On massive spin 2 in Fradkin-Vasiliev formalism* — 10:00, 30 + 5 min  
Technical break — 5 min
  2. Alexey Sharapov (Tomsk State U.)  
*Observables and Invariants in 4D Higher Spin Gravity* — 10:40, 30 + 5 min  
Technical break — 5 min
  3. Yasha Neiman (Okinawa Inst. of Science And Technology)  
*What is the force between two higher-spin black holes?* — 11:20, 30 + 5 min
- Discussion — 35 min

### **Break. 12:30-13:30 Moscow Time**

### **Afternoon Session. 13:30 Moscow Time**

Chairman: *Xavier Bekaert (U. of Tours)*

1. Matthias Gaberdiel (ETH, Zurich)  
*An exact AdS/CFT duality* — 13:30, 30 + 5 min  
Technical break — 5 min
  2. Bo Sundborg (Stockholm U.)  
*Thermal Large N Holography* — 14:10, 30 + 5 min  
Technical break — 5 min
  3. Andrei Parnachev (Trinity College Dublin)  
*Stress tensor sector of conformal correlators and holography* — 14:50, 30 + 5 min
- Discussion — 35 min

### **Break. 16:00 -17:00 Moscow Time**

## Evening Session. 17:00 Moscow Time

Chairman: *Alexey Isaev (BLTP JINR, Dubna)*

1. Augusto Sagnotti (Scuola Normale Superiore, Pisa)  
*Stability Issues with Broken Supersymmetry* — 17:00, 30 + 5 min  
Technical break — 5 min
  2. Per Sundell (Andres Bello Natl. U., Santiago)  
*Quantization of massless particles and gauged Poisson sigma models* — 17:40, 30 + 5 min  
Technical break — 5 min
  3. Dario Francia (Enrico Fermi Ctr., Rome & Roma Tre U.)  
*On the Lagrangian formulation of the double copy* — 18:20, 30 + 5 min
- Discussion — 35 min

## Thursday, June 3

We use Moscow time (GMT+3). The talk times (30+5 min) include 30 min for presentations and 5 min for questions.

### **Morning Session. 10:00 Moscow Time**

Chairman: *Konstantin Zarembo (Nordita, Stockholm)*

1. Alexander Belavin (Landau Inst. for Theoretical Physics, Moscow)  
*On multiple mirrors of Calabi-Yau manifolds* — 10:00, 30 + 5 min  
Technical break — 5 min
2. Alexander Gorsky (ITEP, Moscow)  
 *$T\bar{T}$  deformation of 2d Yang-Mills: collective field theory and phase transitions* — 10:40, 30 + 5 min  
Technical break — 5 min
3. Alexey Isaev (BLTP JINR, Dubna)  
*Massless finite and infinite spin representations of Poincaré group in six dimensions* — 11:20, 30 + 5 min  
Discussion — 35 min

### **Break. 12:30-13:30 Moscow Time**

### **Afternoon Session. 13:30 Moscow Time**

Chairman: *Arkady Tseytlin (Imperial College London)*

1. Vladimir Kazakov (ENS, Paris)  
*Dually weighted graphs and 2d quantum gravity* — 13:30, 30 + 5 min  
Technical break — 5 min
2. Alexey Litvinov (Landau Inst. for Theoretical Physics, Moscow)  
*Integrable structures in CFT and affine Yangians* — 14:10, 30 + 5 min  
Technical break — 5 min
3. Sergey Fedoruk (BLTP JINR, Dubna)  
 *$N=2$  and  $N=4$  hyperbolic Calogero-Sutherland systems from gauging matrix models* — 14:50, 30 + 5 min  
Discussion — 35 min

### **Break. 16:00 -17:00 Moscow Time**



## Evening Session. 17:00 Moscow Time

Chairman: *Augusto Sagnotti (Scuola Normale Superiore, Pisa)*

1. Juan Maldacena (Inst. for Advanced Study, Princeton)  
*Comments on black holes at the string temperature* — 17:00, 30 + 5 min  
Technical break — 5 min
  2. Axel Kleinschmidt (Max Planck Inst. for Gravitational Physics, Potsdam)  
*E11 exceptional field theory* — 17:40, 30 + 5 min  
Technical break — 5 min
  3. Vyacheslav Didenko (Lebedev Physical Inst., Moscow)  
*On planar solutions in HS theory* — 18:20, 30 + 5 min
- Discussion — 35 min

## Friday, June 4

We use Moscow time (GMT+3). The talk times (30+5 min) include 30 min for presentations and 5 min for questions.

### **Morning Session. 10:00 Moscow Time**

Chairman: *Dmitry Kazakov (JINR, Dubna)*

1. Irina Aref'eva (Steklov Math. Inst., Moscow)  
*Holographic QCD for NICA* — 10:00, 30 + 5 min  
Technical break — 5 min
  2. Oleg Andreev (Landau Inst. for Theoretical Physics, Moscow & Munich U., ASC)  
*Is the string breaking distance in QCD universal?* — 10:40, 30 + 5 min  
Technical break — 5 min
  3. Gregory Korchemsky (IPhT, Saclay)  
*Symmetries of energy flow operators* — 11:20, 30 + 5 min
- Discussion — 35 min

### **Break. 12:30-13:30 Moscow Time**

### **Afternoon Session. 13:30 Moscow Time**

Chairman: *Gregory Korchemsky (IPhT, Saclay)*

1. Gleb Arutyunov (Hamburg U.)  
*New integrable coset sigma models* — 13:30, 30 + 5 min  
Technical break — 5 min
  2. Arkady Tseytlin (Imperial College London)  
*Integrability and RG flow in 2d sigma models* — 14:10, 30 + 5 min  
Technical break — 5 min
  3. Konstantin Zarembo (Nordita, Stockholm)  
*Integrability in defect CFT* — 14:50, 30 + 5 min
- Discussion — 35 min

### **Break. 16:00 -17:00 Moscow Time**

## Evening Session. 17:00 Moscow Time

Chairman: *Evgeny Ivanov (BLTP JINR, Dubna)*

1. Dmitri Sorokin (INFN, Padua)  
*ModMax and Others* — 17:00, 30 + 5 min  
Technical break — 5 min
2. Nicolas Boulanger (UMH, Mons)  
*Exotic duality and higher-spin* — 17:40, 30 + 5 min  
Technical break — 5 min
3. Igor Bandos (Basque U., Bilbao)  
*On polarized scattering equation for amplitudes of 10D SYM and  
11D supergravity.* — 18:20, 30 + 5 min  
  
Discussion — 35 min