

# Integrable Systems and Automorphic Forms

Sirius Mathematics Center,  
Sochi

International Laboratory of Mirror Symmetry  
and Automorphic Forms, HSE, Moscow

## SCHEDULE

24/02/2020

09:30-10:00	<b>Registration</b>	
10:00-10:30	<b>V. Buchstaber</b>	Hyperelliptic sigma functions in mathematical physics.
10:30-11:00	<b>M. Leitner</b>	Convolutions on the complex torus.
11:00-11:30	<b>Coffee break</b>	
11:30-12:00	<b>R. Salvati Manni</b>	An overview on Kodaira dimension of the moduli space of principally polarized abelian varieties
12:00-12:30	<b>A. Basalaev</b>	Theta constants and mirror symmetry for simple-elliptic singularities.
12:30-13:00	<b>A. Veselov</b>	Automorphic Lie algebras and modular forms.
13:00-15:00	<b>Lunch</b>	
15:00-15:30	<b>E. Ferapontov</b>	Dispersionless integrable systems and modular forms.
15:30-16:00	<b>O. Sheinman</b>	Inverse scattering method in presence of group symmetry.
16:00-16:30	<b>Coffee break</b>	
16:30-17:00	<b>N-P. Skoruppa</b>	Invariants of Weill representations of $SL(2, \mathbb{Z})$ .
17:00-17:30	<b>F. Zerbini</b>	String amplitudes from genus zero to genus one.
17:45-19:00	<b>Welcome drink</b>	

25/02/2020

09:30-10:00	<b>T. Ibukiyama</b>	Automorphic differential operators and special functions.
10:00-10:30	<b>A. Pantchichkine</b>	Algebraic differential operators on unitary groups and their applications.
10:30-11:00	<b>V. Ovsienko</b>	q-deformed rationals, and q-deformed real numbers.
11:00-11:30	<b>Coffee break</b>	
11:30-12:00	<b>M. Pevzner</b>	Symmetry breaking versus holography in Representation Theory.
12:00-12:30	<b>Q. Labriet</b>	Holographic operators associated with the Rankin-Cohen brackets.
12:30-13:00	<b>B. Kruglikov</b>	Relative Differential Invariants.
13:00-15:00	<b>Lunch</b>	
15:00-15:30	<b>H. Wang</b>	Reflective modular forms, Siegel paramodular forms and theta blocks.
15:30-16:00	<b>B. Williams</b>	Higher pullbacks of modular forms on orthogonal groups.
16:00-16:30	<b>Coffee break</b>	
16:30-17:00	<b>E. Royer</b>	Kloosterman paths of prime powers moduli.
17:00-17:30	<b>A. Kalmynin</b>	Sums of squares, Jacobi forms and differential equations.
17:45-18:30	<b>PROBLEM SESSION:</b> <b>moderator Evgeny Ferapontov</b>	

**26/02/2020**

**A tour of the region and exploring the center of Sirius.**

**27/02/2020**

09:30-10:00	<b>H. Rosengren</b>	Correlations of the XYZ spin chain and modular tau functions of Painlevé VI.
10:00-10:30	<b>P. Vanhove</b>	Mirror symmetry and Feynman integrals.
10:30-11:00	<b>R. Lee</b>	Modern methods of multiloop calculations.
11:00-11:30	<b>C o f f e e b r e a k</b>	
11:30-12:00	<b>W. Nahm</b>	Automorphic forms and quantum field theory.
12:00-12:30	<b>S. Natanzon</b>	Formal solution to the h-KP hierarchy.
12:30-13:00	<b>I. Gayur</b>	Dualities for Non-commutative Painlevé-Calogero hamiltonians: Ruijsenaars versus Spectral.
13:00-15:00	<b>L u n c h</b>	
15:00-15:30	<b>M. Feigin</b>	Trigonometric solutions of WDVV equations.
15:30-16:00	<b>I. Strachan</b>	Elliptic trilogarithms and solutions of the WDVV equations.
16:00-16:30	<b>C o f f e e b r e a k</b>	
16:30-17:00	<b>V. Spiridonov</b>	Modular quantum dilogarithm, hyperbolic beta-integrals and integrable systems.
17:00-17:30	<b>V. Gritsenko</b>	Modular differential operators and t-deformation of modular forms.
17:45-18:30	<b>PROBLEM SESSION: moderators Michael Pevzner and Volodya Rubtsov</b>	

**28/02/2020**

09:30-10:00	<b>D. Talalaev</b>	Electrical varieties and discreet integrability.
10:00-10:30	<b>V. Gorbunov</b>	Electrical Lie algebras and groups and their representations.
10:30-11:00	<b>D. Adler</b>	Jacobi forms and root systems.
11:00-11:30	<b>C o f f e e b r e a k</b>	
11:30-12:00	<b>A. Zotov</b>	Kronecker function on supersymmetric elliptic curves and Yang-Baxter equations
12:00-12:30	<b>V. Rubtsov</b>	Fay identity: from Mathematical Physics through Geometry to Number Theory.
12:30-13:00	<b>N. Hemelsoet</b>	A computer algorithm for the BGG resolution
13:00-15:00	<b>L u n c h</b>	
15:00-15:30	<b>E. Bunkova</b>	Lie algebras of heat operators.
15:30-16:00	<b>M. Pavlov</b>	Whitham equations and the Chazy equation
16:00-16:30	<b>C o f f e e b r e a k</b>	
16:30-17:30	<b>PROBLEM SESSION: moderator Valery Gritsenko</b>	