

**Program of the International Youth Conference «Geometry and Control», 14-18 April 2014**

**Monday, April 14**

10.00 – 10.45 Registration

10.45 Opening of the conference

10.50 – 11.35 *Davide Barilari*, Heat kernel asymptotics at the cut locus on Riemannian and sub-Riemannian manifold

Coffee break

12.00 – 12.45 *Luca Rizzi*, Comparison Theorems in sub-Riemannian geometry

12.50 – 13.35 *Nicolas Juillet*, Diffusion by optimal transport in the Heisenberg group

Lunch

15.30 – 16.00 *Pavel Silveira*, On conjugate times of LQ optimal control problems

16.05 – 16.35 *Evgeny Kornev*, Sub-Riemannian and Riemannian Structures on the Lie Algebroids

Coffee Break

17.00– 17.30 *Pavel Bibikov*, Classification of binary forms with control parameter

17.35 – 18.05 *Dmitry Gritsenko*, Differential invariants of feedback transformations for quasi-harmonic oscillation equations

## Tuesday, April 15

10.00 – 10.45 *Alexander Pechen*, Some topics in modern quantum control

10.50 – 11.35 *Lev Lokutsievskiy*, Hamiltonian flow of singular trajectories

Coffee break

12.00 – 12.30 *Nikolai Il'in*, Absence of local maxima for optimal control of two-level quantum systems

12.35 – 13.05 *Alexey Fedorov and Alexander Ovseevich*, From approximate reachable sets to asymptotic control theory

13.10 – 13.40 *Andrei Ardentov*, Nilpotent sub-Riemannian problem on the Engel group

Lunch

15.30 – 16.00 *Sergey Agapov*, On integrability of the sub-Riemannian geodesic flow for Goursat distribution

16.05 – 16.35 *Dmitry Khlopin*, On an infinite horizon problem of Boltza type

Coffee Break

17.00 Poster session:

*Bagderina Yulia*, Polynomial integrals of the geodesics equations in two-dimensional case

*Butt Yasir Awais, Sachkov Yuri L. and Bhatti Aamer Iqbal*, Maxwell strata and conjugate points in sub-Riemannian problem on group SH(2)

*Mauleshova Gulnara*, Discrete dynamics of the Tyurin parameters and commuting difference operators

*Oskorbin Dmitry*, The spectrum of the curvature operators of the conformally flat metric Lie groups

*Podobryaev Alexey*, Cut locus in the Riemannian problem on SO(3) in axisymmetric case

*Saparbayeva Bayan*, Finite-gap 2D-Schroedinger operators with elliptic coefficient

*Alexander Pechen, Anton Trushechkin*, Optimal Quantum Control of the Landau–Zener System by Measurements

## **Wednesday, April 16**

10.00 – 10.45 *Erik Lundberg*, The average number of connected components of an algebraic hypersurface

10.50 – 11.35 *Antonio Lerario*, How many geodesics are there between two close points on a sub-Riemannian manifold?

Coffee break

12.00 – 12.45 *Alessandro Gentile*, Geodesics and topology of horizontal-path spaces in Carnot groups

12.50 – 13.20 *Ivan Beschatnyi*, Almost-Riemannian geometry of the two-sphere

Lunch

Free afternoon

## **Thursday, April 17**

10.00 – 10.45 *Evgeny Malkovich*, Construction of classical metrics with special holonomies via geometrical flows

10.50 – 11.35 *Hazhgali Kozhasov*, Laplacian flow of G2-structures on  $S^3 \times R^4$

Coffee break

12.00 – 12.45 *Dario Prandi*, The Laplace-Beltrami operator on conic and anti-conic surfaces

12.50 – 13.35 *Thomas Gallouet*, Ma-Trudinger-Wang tensor, from PDE regularity to geometric information

Lunch

15.30 – 16.00 *Elisa Paoli*, The heat kernel and its asymptotic on the diagonal for an optimal control problem with drift

16.05 – 16.35 *Francesco Boarotto*, Local conformal flatness of left-invariant 3D contact structures

Coffee Break

17.00 – 17.30 *Valentina Davletshina*, Self-adjoint commuting differential operators of rank two and their deformation, given by soliton equations

17.35 – 18.05 *Maxim Tryamkin*, Mappings with bounded distortion on roto translation groups

## **Friday, April 18**

10.00 – 10.45 *Enrico le Donne*, Regularity of isometries of sub-Riemannian manifolds

10.50 – 11.35 *Maria Karmanova*, Metric geometry of Carnot – Caratheodory spaces and its applications

Coffee break

12.00 – 12.30 *Sergey Basalaev*, Geometric and analytic properties of Carnot – Caratheodory spaces under minimal smoothness

12.35 – 13.05 *Svetlana Selivanova*, Local and metric geometry of nonregular weighted Carnot – Caratheodory spaces

13.10 – 13.40 *Konstantin Besov*, Optimal R&D Policy in a Model Based on Exhaustible Resources

Closing of the conference