

ERC Workshop on Geometric Analysis on sub-Riemannian and metric spaces

Centro De Giorgi, Scuola Normale Superiore, October 10-14, 2011

Palazzo del Castelletto, Aula Dini, via del Castelletto, Pisa

Schedule

Monday 10

8.20-8.30. *Welcome address*

8.30-9.20. **Piotr Hajlasz** (University of Pittsburgh)

On the lack of density of Lipschitz mappings in Sobolev spaces with Heisenberg target

9.30-10.20. **Jan Malý** (Charles University in Prague)

Luzin's condition N and Sobolev mappings

10.20-10.40. Coffee break

10.40-11.30. **Jeremy Tyson** (University of Illinois)

The effect of projections on dimension in the Heisenberg group

11.40-12.30. **Nages Shanmugalingam** (University of Cincinnati)

Regularity of sets of quasiminimal boundary surfaces in metric setting

12.30-12.50. *Registration*

Lunch

14.30-15.20. **Peter Haissinsky** (Université de Provence)

Conformal dimension and characterization of conformal dynamical systems

15.30-16.20. **Nicola Gigli** (Université de Nice)

On the interplay between horizontal and vertical derivation

16.20-16.50. Coffee break

16.50-17.20. **Amos Nathan Koeller** (Tübingen University)

Possibilities Stemming from the Euclidean Setting

17.30-18.00. **Davide Barilari** (SISSA, Trieste)

Invariants and heat kernels in 3D contact sub-Riemannian Geometry

Tuesday 11

8.30-9.20. **Nicola Garofalo** (Purdue University)

Boundedness of the Riesz Transforms for some Subelliptic Operators

9.30-10.20. **Francesco Serra Cassano** (Università di Trento)

Intrinsic C^1 and Lipschitz graphs in the Heisenberg group and continuous solutions of Burgers equation

10.20-10.40. Coffee break

10.40-11.30. **Federica Dragoni** (University of Cardiff)

\mathcal{X} -convexity and applications

11.40-12.30. **Martino Bardi** (Università di Padova)

On some fully nonlinear subelliptic PDEs

Lunch

14.30-15.20. **Pierre Martinetti** (Dipartimento di Matematica & CMTP, Università di Roma Tor Vergata)

Gauge fluctuation in Noncommutative Geometry and Carnot-Carathéodory distance

15.30-16.00. **Yuan Zhou** (Beijing University of Aeronautics and Astronautics)

Geometry and Analysis of Dirichlet forms

16.10-16.40. **Svetlana Selivanova** (Sobolev Institute of Mathematics)

Local geometry of nonregular quasimetric "Carnot-Carathéodory spaces".

16.40-17.10. Coffee break

17.10-17.40. **Roberta Ghezzi** (CMAP, École Polytechnique)

A new class of $(H^k, 1)$ -rectifiable subsets of metric spaces

17.50-18.20. **Bozhidar Velichkov** (Scuola Normale Superiore, Pisa)

Shape optimization problems on metric measure spaces

Wednesday 12

8.30-9.20. **Pierre Pansu** (Université Paris-Sud)

L^p -cohomology and pinching

9.30-10.20. **Marc Bourdon** (Université de Lille)

L^p -cohomology and conformal dimension

10.20-10.40. Coffee break

10.40-11.30. **Urs Lang** (ETH Zurich)

Asymptotic Plateau problems in spaces of higher asymptotic rank

11.40-12.30. **Bruno Franchi** (Università di Bologna)

Maxwell's equations in Carnot groups

Lunch

Free afternoon

Thursday 13

8.30-9.20. **Dachun Yang** (School of Mathematical Sciences, Beijing Normal University)

Sobolev Spaces on Metric Measure Spaces

9.30-10.20. **Jana Bjorn** (Linköping University)

De Giorgi's method: in(s) and out(s)

10.20-10.40. Coffee break

10.40-11.30. **Zoltan Balogh** (Universität Bern)

Modulus method and radial stretch map in the Heisenberg group

11.40-12.30. **Ilkka Holopainen** (University of Helsinki)

Nonsolvability of the Dirichlet Problem at Infinity for p -Laplacian on Cartan-Hadamard Manifolds

Lunch

14.30-15.20. **Giovanna Citti** (Università di Bologna)

A Poincaré inequality for Lipschitz intrinsic vector fields in the Heisenberg group

15.30-16.20. **Daniele Morbidelli** (Università di Bologna)

Involutive families of vector fields, their orbits and the Poincaré inequality

16.20-16.50. Coffee break

16.50-17.40. **Herve Pajot** (Université de Grenoble)

Nonnegative Ricci curvature and Poincaré inequalities

17.50-18.40. **Michele Miranda** (Università di Ferrara)

Two characterizations of BV functions on Carnot groups via the heat semigroup

Friday 14

8.30-9.20. **Xiao Zhong** (University of Jyväskylä)

Quantitative isoperimetric inequalities

9.30-10.20. **Roberto Monti** (Università di Padova)

New results on subriemannian geodesics

10.20-10.40. Coffee break

10.40-11.30. **Eero Saksman** (University of Helsinki)

Burkholder functionals, quasiconformal maps and singular integrals

11.40-12.30. **Davide Vittone** (Università di Padova)

Lipschitz hypersurfaces and perimeter in Carnot-Carathéodory spaces