

Week 4 of the Thematic Programme on
“Infinite-dimensional Geometry: Theory and Applications”
February 3 - 7, 2025

organized by

Tomasz Goliński (U of Białystok), Gabriel Larotonda (U of Buenos Aires), Alice Barbara Tumpach (WPI, Vienna), Cornelia Vizman (WU of Timisoara)

• **Monday, February 3rd, 2025**

09:00 – 09:30 **Registration**

09:30 – 09:40 **Opening**

09:40 – 10:40 **Mini-Course 1 Lecture 1 (1 hour including questions) Blanche Buet (U Paris-Saclay)**
Varifolds: variational manifolds.

10:40 – 11:10 **Coffee break**

11:10 – 12:00 **Invited talk (40 min + 10 min questions) Tom Needham (Florida State U, Tallahassee)**
Gromov-Wasserstein Distance and Applications to Shape Graphs

12:00 – 14:00 **Lunch break**

14:00 – 15:00 **Mini-Course 2 Lecture 1 (1 hour including questions) Klas Modin (Chalmers U of Technology, Gothenburg)**
Information geometry of diffeomorphism groups

15:00 – 15:30 **Coffee or Tea break**

• **Tuesday, February 4th, 2025**

09:00 – 10:00 **Mini-Course 1 Lecture 2 (1 hour including questions) Blanche Buet (U Paris-Saclay)**
Varifolds: variational manifolds.

10:05 – 10:30 **Short talk (20 min + 5 min questions) Rayane Mouhli (U Paris Cité)**
Decorrelation of vector fields with speed of varifolds

10:30 – 11:00 **Coffee break**

11:00 – 12:00 **Keynote talk (1 hour including questions) Alice Le Brigant (Panthéon-Sorbonne, U Paris 1)**
The L^p -Fisher-Rao metrics and alpha-connections

12:00 – 14:00 **Lunch break**

14:00 – 15:00 **Mini-Course 2 Lecture 2 (1 hour including questions) Klas Modin (Chalmers U of Technology, Gothenburg)**
Information geometry of diffeomorphism groups

15:00 – 15:30 **Coffee or Tea break**

15:30 – 15:55 **Short talk (20 min + 5 min questions) Thomas Pierron (ENS Paris-Saclay)**
Extended LDDMM and applications to multi-scale matching problems

- **Wednesday, February 5th, 2025**

09:00 – 10:00 **Frugal Day: (1 hour including questions)** Guillaume Charpiat (INRIA Saclay)
Neural Network Growth for Frugal AI

10:05 – 10:30 **Frugal Day: (20 min + 5 min questions)** Styliani Douka (INRIA Paris)
Growing arbitrary DAG networks: method and strategies

10:30 – 11:00 **Coffee or Tea break**

11:00 – 11:25 **Frugal Day: (20 min + 5 min questions)** Theo Rudkiewicz (INRIA Saclay)
Tensor decomposition in frugal neural networks

11:35 – 12:00 **Frugal Day: (20 min + 5 min questions)** Stéphane Rivaud (INRIA Paris)
Transformer Architecture Growth

12:00 – 14:00 **Lunch break**

14:00 – 15:00 **Frugal Day: (1 hour including questions)** Manon Verbockhaven (INRIA Paris)
Growing Tiny Networks: Spotting Expressivity Bottlenecks and Fixing Them Optimally

15:00 – 15:30 **Coffee or Tea break**

15:30 – 16:30 **Keynote talk (1 hour including questions)** Rita Fioresi (U Bologna)
Learning Manifold and dimensionality reduction in Deep and Geometric Learning

17:00 **Cocktail reception**

- **Thursday, February 6th, 2025**

09:00 – 10:00 **Mini-Course 1 Lecture 3 (1 hour including questions)** Blanche Buet (U Paris-Saclay)
Varifolds: variational manifolds.

10:05 – 10:30 **Short talk (20 min + 5 min questions)** Guilherme Feitosa de Almeida (SISSA, Trieste)
On the Correspondence Between Statistical Manifolds and Flat F -Manifolds in Hyperbolic geometry

10:30 – 11:00 **Coffee or Tea break**

11:00 – 12:00 **Keynote talk (1 hour including questions)** Fabian Rupp (U of Vienna)
Conformally constrained minimization of total curvature

12:00 – 14:00 **Lunch break**

14:00 – 15:00 **Mini-Course 3 Lecture 3 (1 hour including questions)** Klas Modin (Chalmers U of Technology, Gothenburg)
Information geometry of diffeomorphism groups

15:00 – 15:30 **Coffee or Tea break**

- **Friday, February 7th, 2025**

09:00 – 09:30 **Tutorial (30 min)** Alice Barbara Tumpach (WPI, Vienna)
Gauge invariant structures

09:30 – 10:30 **Keynote talk (1 hour including questions)** Alain Trouvé (ENS Cachan)
TBA

10:30 – 11:00 **Coffee or Tea break**

11:00 – 12:00 **Keynote talk (1 hour including questions)** Martin Bauer (Florida State U, Tallahassee)
Infinite dimensional Riemannian geometry and geometric data science

12:00 – 14:00 **Lunch break**

14:00 – 14:50 **Invited talk (40 min + 10 min questions) Minh Ha Quang (RIKEN AIP, Tokyo)**

An information geometric and optimal transport framework for Gaussian processes

14:55 – 15:20 **Short talk (20 min + 5 min questions) Guillaume Serieys (U Paris Cité)**

On the metric geometry of general Lebesgue spaces and metrics accounting for the action of Sobolev diffeomorphisms.

15:20 – 15:40 **Coffee break**

15:40 – 16:30 **Invited talk (40 min + 10 min questions) Karen Habermann (U Warwick)**

Geodesic and stochastic completeness for landmark space

16:30 – 16:40 **Closing**

All talks take place at ESI Boltzmann Lecture Hall!