

Week 2 of the Thematic Programme on
“Infinite-dimensional Geometry: Theory and Applications”

January 20 - 24, 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, January 20th, 2025**

09:00 – 09:30 **Registration**

09:30 – 09:40 **Opening**

09:40 – 10:40 **Mini-Course 1 lecture 1 (1 hour including questions) Annalisa Calini (College of Charleston)**

Finite-gap solutions of integrable geometric curve flows

10:40 – 11:10 **Coffee or Tea break**

11:10 – 12:00 **Invited talk (40 min + 10 min questions) Oscar Cosserat (Georg-August-U, Göttingen)**

Hamiltonian dynamics on Poisson manifolds and symplectic groupoids

12:00 – 14:00 **Lunch break**

14:00 – 15:00 **Mini-Course 2 lecture 1 (1 hour including questions) Katarzyna Grabowska (U Warsaw)**

Geometric Mechanics – Tulczyjew Triples, Algebroids, and Dirac Structures

15:00 – 15:30 **Coffee or Tea break**

15:30 – 16:30 **Mini-Course 3 lecture 1 (1 hour including questions) Anton Izosimov (U of Arizona, Tucson)**

Infinite-dimensional geometry and integrable PDEs

• **Tuesday, January 21st, 2025**

09:00 – 09:30 **Tutorial (30 min) Cornelia Vizman (WU of Timisoara)**

Vortex dynamics

09:40 – 10:30 **Invited talk (40 min + 10 min questions) Ali Suri (U of Paderborn)**

Conjugate points along spherical harmonics and quasi-geostrophic motion

10:30 – 11:00 **Coffee or Tea break**

11:00 – 12:00 **Mini-Course 1 lecture 2 (1 hour including questions) Annalisa Calini (College of Charleston)**

Finite-gap solutions of integrable geometric curve flows

12:00 – 14:00 **Lunch break**

14:00 – 15:00 **Mini-Course 2 lecture 2 (1 hour including questions) Katarzyna Grabowska (U Warsaw)**

Geometric Mechanics – Tulczyjew Triples, Algebroids, and Dirac Structures

15:00 – 15:30 **Coffee or Tea break**

15:30 – 16:30 **Mini-Course 3 lecture 2 (1 hour including questions)** Anton Izosimov (U of Arizona, Tucson)

Infinite-dimensional geometry and integrable PDEs

- **Wednesday, January 22nd, 2025**

09:00 – 09:30 **Tutorial (30 min)** Gabriel Larotonda (U of Buenos Aires)

Connections in infinite dimensional manifolds: the Ambrose-Palais-Singer way

09:30 – 10:30 **Mini-course 1 lecture 3** Annalisa Calini (College of Charleston)

Finite-gap solutions of integrable geometric curve flows

10:30 – 11:00 **Coffee or Tea break**

11:00 – 12:00 **Mini-Course 2 lecture 3 (1 hour including questions)** Katarzyna Grabowska (U Warsaw)

Geometric Mechanics – Tulczyjew Triples, Algebroids, and Dirac Structures

12:00 – 14:00 **Lunch break**

14:00 – 15:00 **Mini-Course 3 lecture 3 (1 hour including questions)** Anton Izosimov (U of Arizona, Tucson)

Infinite-dimensional geometry and integrable PDEs

15:00 – 15:30 **Coffee or Tea break**

15:30 – 16:30 **Keynote talk (1 hour including questions)** Keti Tenenblat (U of Brasilia)

Classes of nonlinear PDEs related to metrics of constant curvature

17:00 **Cocktail reception**

- **Thursday, January 23rd, 2025**

09:00 – 09:30 **Tutorial (30 min)** Cornelia Vizman (WU of Timisoara)

Prequantizable coadjoint orbits of diffeomorphism groups

09:40 – 10:30 **Invited talk (40 min + 10 min questions)** Stefan Haller (U of Vienna)

Augmented nonlinear Grassmannians as coadjoint orbits of classical diffeomorphism groups

10:30 – 11:00 **Coffee or Tea break**

11:00 – 12:00 **Keynote talk (1 hour including questions)** Stephen Preston (Brooklyn College)

Geometry and curvature of diffeomorphism groups

12:00 – 14:00 **Lunch break**

14:00 – 14:50 **Invited talk (40 min + 10 min questions)** Levin Maier (U Heidelberg)

On Mañé's Critical Value, the Magnetic Hunter-Saxton System, and an Infinite-Dimensional Magnetic Hopf-Rinow Theorem

14:50 – 15:30 **Coffee or Tea break**

15:30 – 16:30 **Keynote talk (1 hour including questions)** Eva Miranda (UPC, Barcelona)

Euler flows as universal models for dynamical systems

- **Friday, January 24th, 2025**

09:00 – 09:50 **Invited talk (40 min + 10 min questions)** Janusz Grabowski (IMPAN, Warsaw)

Geometry of quantum dynamics in infinite-dimensions

10:00 – 10:50 **Invited talk (40 min + 10 min questions)** Alina Dobrogowska (U of Białystok)

A new look at Lie algebras

10:50 – 11:10 **Coffee or Tea break**

11:10 – 12:00 **Invited talk (40 min + 10 min questions) Bas Janssens (TU Delft)**
Central extensions of the group of exact volume preserving diffeomorphisms

12:00 – 14:00 **Lunch break**

14:00 – 14:50 **Invited talk (40 min + 10 min questions) Baptiste Coquinot (ISTA)**
Tracking Dissipative Dynamics with Geometry

14:50 – 15:30 **Coffee or Tea break**

15:30 – 16:30 **Keynote talk (1 hour including questions) François Gay-Balmaz (NTU, Singapore)**
On Two Extensions of Arnold's Geometric Fluid Dynamics
– online

16:30 – 16:40 **Closing**

All talks take place at ESI Boltzmann Lecture Hall!