



GEOMETRY, DYNAMICS  
AND FIELD THEORY NETWORK

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## Contents

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Outstanding event	1
Other conferences	1
Virtual seminars	3
Job offers, fellowships and supports	3
Ph.D. offers . . . . .	3
Postdoctoral fellowships . .	4
Offers for researchers . . . .	5
Offers for visiting researchers	5
Financial support . . . . .	6
News and publications	7
Journals . . . . .	7
Preprints	7
Network's members . . . . .	7
Network's collaborators . .	7
Links of interest	8

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# *Geometry, Dynamics and Field Theory Network Infosheet*

## Outstanding event

**XXXII International Fall Workshop on Geometry and Physics.**

2–5 September 2024, Coimbra, Portugal.

## Other conferences

**Geometry and Physics of Mirror Symmetry.**

2–6 September 2024, Sheffield, United Kingdom.

**Conference on Recent Developments in Topological Quantum Field Theory.**

2–7 September 2024, Beijing, China.

**Summer School & Workshop on Automorphic Forms and Related Topics.**

2–13 September 2024, Luminy, France.

**Introductory Workshop: Special Geometric Structures and Analysis.**

3–6 September 2024, Berkeley, USA.

**Introductory Workshop: Special Geometric Structures and Analysis.**

3–6 September 2024, Berkeley, USA.

**Non-Hermitian topology, geometry and symmetry across physical platforms.**

3 September–11 October 2024, New York, USA.

**Modeling and Simulations in Fluids.**

7–8 September 2024, Providence, USA.

**Stochastics and Geometry.**

8–13 September 2024, Banff, Canada.

**Towards Routine Orbital-free Large-Scale Quantum-Mechanical Modelling of Materials.**

8–13 September 2024, Hangzhou, China.

**Bridges between Machine Learning and Quantum Information Science.**

9–10 September 2024, Luminy, France.

**Summer school on Inverse Problems in Mechanics.**

9–14 September 2024, Quiberon, France.

**Quantum Field Theory I (Online mode).**

9 September 2024–31 January 2025, Trieste, Italy.

**Quantization in Representation Theory, Derived Algebraic Geometry, and Gauge Theory.**

15–20 September 2024, Les Diablerets, Switzerland.

**Nonlocal Problems in Mathematical Physics, Analysis and Geometry.**

15–20 September 2024, Hangzhou, China.

**Calculus of Variations: a New Generation.**

16–20 September 2024, Bonn, Germany.

**The Fundamentals Summer School in High-Energy and Gravitational Physics.**

16–20 September 2024, Split, Croatia.

**Non-Commutative Geometry and Higher Structures.**

17–21 September 2024, Thessaloniki, Greece.

**Non-Hermitian topology, geometry and symmetry across physical platforms.**

23–27 September 2024, New York, USA.

**Workshop on Time Delay Systems.**

24–27 September 2024, Udine, Italy.

**Anabelian Geometry and Representations of Fundamental Groups.**

29 September–4 October 2024, Oberwolfach, Germany.

**Symplectic and Contact Geometry.**

4–6 October 2024, Minnesota, USA.

**Integrability, Geometry and QFT.**

7–11 October 2024, Madrid, Spain.

**Mathematical Billiards: at the Crossroads of Dynamics, Geometry, Analysis, and Mathematical Physics.**

9 October–15 December 2024, New York, USA.

**Quantum Groups and Representation Theory**

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12–15 October 2024, Raleigh, USA.

**Poisson Geometry and Artin-Schelter Regular Algebras.**

13–18 October 2024, Hangzhou, China.

**Random paths to QFT: New probabilistic approaches to field theory.**

14 October–22 November 2024, New York, United States.

**Recent progress on geometric analysis and Riemannian geometry.**

21–25 October 2024, Berkeley, USA.

**New trends in Geometry, Combinatorics, and Mathematical Physics.**

21–25 October 2024, Vieille Perrotine, France.

**Deep learning for PDE-based inverse problems.**

27–31 October 2024, Oberwolfach, Germany.

**2nd International Conference on Differential Geometry.**

28–31 October 2024, Fez, Morocco.

**Mathematics of fluids in motion: Recent results and trends.**

11–15 November 2024, Luminy, France.

**Geometry and analysis of special structures on manifolds.**

18–22 November 2024, Berkeley, USA.

**Control and Machine Learning.**

24–29 November 2024, Oberwolfach, Germany.

**Frontiers in Sub-Riemannian Geometry.**

25–29 November 2024, Luminy, France.

**24th Australasian Fluid Mechanics Conference.**

1–5 December 2024, Canberra, Australia.

**Quantum information dynamics and non-equilibrium quantum matter.**

2–6 December 2024, New York, USA.

**13th International Conference on Computational Mechanics.**

6–8 December 2024, Sanya, China.

**Data-driven Modeling, Analysis, and Control of Dynamical Systems.**

8–13 December 2024, Oberwolfach, Germany.

**High-Dimensional Control Problems and Mean-Field Equations with Applications in Machine Learning.**

8–13 December 2024, Oberwolfach, Germany.

**Foliations and Diffeomorphism Groups.**

9–13 December 2024, Luminy, France.

**The AIMS Conference Series on Dynamical Systems and Differential Equations.**

16–20 December 2024, Abu Dhabi, United Arab Emirates.

**Energy Operators in Particle Physics, Quantum Field Theory and Gravity.**

16–20 December 2024, New York, USA.

### **Representation Theory and Noncommutative Geometry.**

6 January–4 April 2025, Paris, France.

### **Infinite-dimensional Geometry: Theory and Applications.**

13 January–14 February 2025, Vienna, Austria.

### **Algebra and Quantum Geometry of BPS Quivers.**

19–24 January 2025, Les Diablerets, Switzerland.

### **Patterns, Dynamics, and Data in Complex Systems.**

21 January–24 February 2025, Providence, USA.

### **Statistical mechanics, Algebra, and Geometry.**

2–7 February 2025, Les Diablerets, Switzerland.

### **Geometric Structures in Group Theory.**

9–14 February 2025, Oberwolfach, Germany.

### **Stochastic Equations and Stochastic Dynamics.**

9–14 February 2025, Les Diablerets, Switzerland.

### **Geometric partial differential equations from unified string theories.**

10–14 February 2025, Pasadena, USA.

### **Circle Packings, Minimal Surfaces, and Discrete Differential Geometry.**

10–14 February 2025, Providence, USA.

## **Virtual seminars**

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### **Seminar of the Geometry, Dynamics, and Field Theory Thematic Network.**

Instituto de Ciencias Matemáticas' seminars on these topics.

### **Geometry and Applications: Modern Mathematical Approaches (GAMMA) Seminar.**

University of Warsaw, the Universitat Rovira i Virgili, and the Polytechnic University of Catalonia.

### **Advanced Lectures on Theoretical Physics and Mathematics.**

ICTP-PWF Latin America-Physics Latam New Seminar Series.

### **Trans-Carpathian Seminar on Geometry and Physics.**

A merger of Bucharest Geometry and Physics Seminar and Warsaw Seminar on Geometric Methods in Physics.

### **One World IAMP Mathematical Physics Seminar.**

Seminar of International Association of Mathematical Physics.

### **Seminar on Geometry with Symmetries.**

On Lie group actions in Riemannian geometry.

### **Control and Optimization Seminar.**

Louisiana State University.

### **Differential Geometry Seminar Torino.**

Organised by the Differential Geometry groups of Università di Torino and Politecnico di Torino.

### **Symplectic Zoominar.**

Online Seminar organized by CRM-Montréal, Princeton/IAS, Tel Aviv, and Paris.

### **ICTP Virtual Seminars.**

Online Seminar organized by International Centre for Theoretical Physics.

### **Theory of Duality Seminar.**

Department of Mathematical Methods in Physics, University of Warsaw.

### **Geometry and Topology Online.**

Warwick Mathematics Institute.

### **Instituto Balseiro Seminar.**

Instituto Balseiro' public seminars live on Youtube.

## **Job offers, fellowships and supports**

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### **Ph.D. offers**

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#### **PhD position in Biomathematics.**

Bielefeld University, Bielefeld, Germany

Closing date: 4 September 2024.

#### **Learning.**

Technical University of Denmark, Lyngby, Denmark

Closing date: 15 September 2024.

#### **PhD scholarship in Geometric Bayesian Deep**

#### **PhD position in Geometry Analysis.**

Goethe University Frankfurt, Frankfurt, Germany  
Closing date: 15 September 2024.

**PhD position in Optimal Transport.**  
Weierstrass Institute for Applied Analysis and  
Stochastics, Berlin, Germany  
Closing date: 30 September 2024.

**PhD position in Stochastic Algorithms.**  
The Forschungsverbund Berlin, Berlin, Germany  
Closing date: 1 October 2024.

**PhD position in Mechanical design.**  
University of Southampton, Southampton, United  
Kingdom  
Closing date: 2 October 2024.

**PhD position in Inverse Magnetisation.**  
INRIA University of Cote d'Azur, Sophia Antipolis,  
France

## Postdoctoral fellowships

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**Postdoctoral position in Quantum Variational  
Calculus.**  
Queen Mary University of London, London, United  
Kingdom  
Closing date: 4 September 2024.

**Postdoctoral position in Complex and Sym-  
plectic Geometry.**  
University of Florence, Florence, Italy  
Closing date: 11 September 2024.

**Postdoctoral position in Analysis/Geometry.**  
University of Fribourg, Fribourg, Switzerland  
Closing date: 14 September 2024.

**2 Postdoctoral positions in Mathematics.**  
Aarhus University, Aarhus, Denmark  
Closing date: 19 September 2024.

**Postdoctoral positions in Analysis and Geome-  
try.**  
Instituto de Matematica Pura e Aplicada, Rio De  
Janeiro, Brazil  
Closing date: 22 September 2024.

**W2 Professorship in Mathematics.**  
University of Göttingen, Göttingen, Germany  
Closing date: 25 September 2024.

**Postdoctoral position in Analysis.**  
UCLouvain, Louvain-la-Neuve, Belgium  
Closing date: 29 September 2024.

**Postdoctoral position in geometric hydrody-  
namics.**

Closing date: 3 October 2024.

**PhD position in Control of Multi-Drone.**  
INRIA Université de Rennes, Rennes, France  
Closing date: 31 October 2024.

**15 PhD positions in Tensor Modelling, Geome-  
try and Optimisation.**  
University of Cote d'Azur, Antibes, France  
Closing date: 31 December 2024.

**PhD scholarship in Geometry of 4-manifolds.**  
University of Adelaide, Adelaide, Australia  
Closing date: Open until filled.

**PhD on geometric numerical integration of dif-  
ferential equations.**  
University of Valencia, Valencia, Spain  
Closing date: Open until filled.

Chalmers University of Technology and University of  
Gothenburg, Sweden  
Closing date: 13 October 2024.

**Postdoctoral position in Mathematics.**  
Baylor University, Waco (TX), United States of Ame-  
rica  
Closing date: 8 November 2024.

**Postdoctoral position in Geometric Variational  
Problems.**  
Bocconi University, Milan, Italy  
Closing date: 30 November 2024.

**Postdoctoral position in Optimal Control.**  
INRIA, Montpellier, France  
Closing date: 31 December 2024.

**Postdoctoral position in applied mathematics  
and theoretical mechanics.**  
School of Mathematics, Jilin University, China, and  
Laboratory of Engineering Sciences for Environment,  
La Rochelle University, France  
Closing date: Open until filled.

**Postdoctoral position in Geometry and Physics.**  
University of Science and Technology of China, Hefei,  
China  
Closing date: Open until filled.

**Humboldt research fellowship for postdoctoral  
researchers.**  
Alexander von Humboldt Foundation  
Closing date: Open.

## Offers for researchers

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### **Lecturer in Geometry.**

University of St Andrews, St Andrews, United Kingdom

Closing date: 12 September 2024.

### **Tenure-track position in Geometric Learning.**

Eindhoven University of Technology, Eindhoven, Netherlands

Closing date: 26 September 2024.

### **Assistant Professor in Geometry and Topology.**

University of Lisbon, Lisbon, Portugal

Closing date: 26 September 2024.

### **Tenure-track position in Mathematics.**

New York City College of Technology, New York, United States of America

Closing date: 5 October 2024.

### **Tenure-track position in Mathematics.**

University of Copenhagen, Copenhagen, Denmark

Closing date: 6 October 2024.

### **Open rank Faculty position in Applied Mathematics.**

Duke Kunshan University, Jiangsu, China

Closing date: 10 October 2024.

### **Tenure-track position in Mathematics.**

Institute of Science and Technology Austria, Klosterneuburg, Austria

Closing date: 23 October 2024.

### **2 Tenure track positions in Applied Mathematics.**

Utah State University, Logan(UT), United States of America

Closing date: 28 October 2024.

### **Tenured/Tenure-track position in Differential Geometry.**

ShanghaiTech University, Shanghai, China

Closing date: 10 January 2025.

## Offers for visiting researchers

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### **Visiting Scholars or Consultants to Institutes in Developing Countries.**

International Centre of Theoretical Physics (ICTP).

To expert advice to enhance existing activities or to initiate a new research programme..

Closing date: 30 September, 31 May.

### **Abel Visiting Scholar Program.**

International Mathematical Union.

Postdoctoral mathematician to visit a research collaborator for a month.

Closing date: 31 December, 30 April and 31 August.

### **Simons Visiting Professors at Mathematisches Forschungsinstitut Oberwolfach.**

Oberwolfach, Germany.

Junior or senior scientists from outside Europe.

Closing date: Open.

### **Focused research groups in Banff, Canada.**

Banff International Research Station, Canada.

Up to 8 researchers for periods of 1 to 2 weeks.

Closing date: Minimum 4 months before the event.

### **Research in Teams in Banff, Canada.**

Banff International Research Station, Canada.

Teams of 2 to 4 researchers for 1 to 2 weeks.

Closing date: Minimum 4 months before the event.

### **International Research in Groups at CIRM.**

Centre International de Rencontres Mathématiques (CIRM), France.

Small groups of researchers for 2 to 4 weeks.

Closing date: Open at any time.

### **Research in Residence at CIRM.**

Centre International de Rencontres Mathématiques (CIRM), France.

2 to 4 researchers.

Closing date: Open at any time.

### **Visiting scholar opportunity in Cambridge.**

University of Cambridge, United Kingdom.

Scholars and fellows for development of research, teaching and collaboration.

Closing date: Open.

### **Small team visiting the CRM.**

Centre de Recerca Matemàtica, Catalonia, Spain.

Postdoctoral positions and research in pairs.

Closing date: Any time between 6 and 12 months before the start of the desired stay.

### **Visiting research fellow in Kent State University.**

Mathematics Department-KSU, Ohio, USA.

Visiting for scholar researchers.

Closing date: Open.

## Financial support

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### **Summer Graduate Schools.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: 1 September every year.**

### **IMU Volunteer Lecturer Program.**

Financial assistance to universities in developing countries to host a 3-4-week intensive course.

**Deadline: 1 September, 1 December 2024 and 1 March 2025.**

### **Trimester Program.**

Hausdorff Research Institute, Bonn, Germany.

**Deadline: 30 September 2024.**

### **Thematic programs at MSRI.**

Mathematical Sciences Research Institute, Berkeley, United States.

**Deadline: 1 October, 1 December and 1 March every year. Three years ahead.**

### **Hot topics Workshop at MSRI.**

Mathematical Sciences Research Institute, Berkeley, United States.

**Deadline: 1 October, 1 December and 1 March every year.**

### **Summer graduate schools at MSRI.**

Mathematical Sciences Research Institute, Berkeley, United States.

**Deadline: 1 October, 1 December and 1 March every year.**

### **Full- or half-year scientific programs.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: 1 October, 1 December and 1 March every year.**

### **Hot topic workshops.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: 1 October, 1 December and 1 March every year.**

### **Revisiting Fundamental Problems Workshop.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: 1 October, 1 December and 1 March every year.**

### **Simons Fellows in Mathematics.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: 2 October 2024.**

### **Targeted Grants to Institutes.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: 3 October 2024.**

### **CIMPA School Projects.**

Financial support for research schools in developing countries.

**Deadline: 12 October 2024.**

### **Simons Collaborations in Mathematics and the Physical Sciences.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: 31 October 2024.**

### **ICTP Mathematics Visiting Fellowships.**

Grants for visits for a maximum period of 3 months.

**Deadline: 31 December 2024.**

### **Workshop at CIRM.**

Centre International de Rencontres Mathématiques, France.

**Deadline: Open at any time.**

### **CIMPA Online courses program.**

Geographic areas of activities of CIMPA (Africa, Central or South America, Asia).

**Deadline: Open all year.**

### **Support for workshop organization at Banff.**

Banff International Research Station.

**Deadline: No precise deadline.**

### **Proposal of a workshop in the Mathematisches Forschungsinstitut Oberwolfach.**

Oberwolfach, Germany.

**Deadline: Open.**

### **Targeted Grants in Mathematical and Physical Sciences.**

Simons Laufer Mathematical Sciences Institute, Berkeley, United States.

**Deadline: At any time.**

### **Hosting a workshop at AIMS South Africa.**

Contributions for workshops about AIMS's research focus areas.

**Deadline: No precise deadline.**



## News and publications

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### Journals

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#### Journal "Geometric Mechanics".

Published by World Scientific about applications of geometric methods in mechanics, dynamics, control, transport, stochastic processes, data science, and learning.

Deadline: No precise deadline.

#### "Recent Mathematical and Theoretical Progress in Quantum Mechanics".

A special issue of "Frontiers in Physics" aims to promote research on open problems in quantum mechanics and foster idea exchange between related fields of

theoretical and mathematical physics.

Deadline: 30 April 2025.

#### "Geometric methods in mechanics and physics".

Open-access sponsored by the International Research Center for Mathematics & Mechanics of Complex Systems Journal (Italy). On topics such as variational methods, numerical methods, and optimization techniques.

Deadline: No precise deadline.

### Preprints

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#### Network's members

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Yiting Chen, Pol Mestres, Emiliano Dall'Anese and Jorge Cortés: *Characterization of the Dynamical Properties of Safety Filters for Linear Planar Systems*.  
2408.00958 (version 2)  
[eess.SY, cs.SY, math.OC]

Alexandre Anahory Simões, Leonardo Colombo, Manuel de León, Modesto Salgado and Silvia Souto: *Symmetry reduction and reconstruction in contact geometry and Lagrange-Poincaré-Herglotz equations*.  
2408.06892  
[math-ph, math.MP, math.SG]

Juan-Pablo Ortega and Florian Rossmannek: *Fading memory and the convolution theorem*.

2408.07386  
[math.OC, cs.LG, math.FA]

Pol Mestres, Kehan Long, Melvin Leok, Nikolay Atanasov and Jorge Cortés: *Stabilization of Nonlinear Systems through Control Barrier Functions*.  
2408.08398  
[math.OC, cs.SY, eess.SY]

Iván Gutiérrez-Sagredo, David Iglesias Ponte, Juan Carlos Marrero and Edith Padrón: *Unimodularity and invariant volume forms for Hamiltonian dynamics on coisotropic Poisson homogeneous spaces*.  
2408.14091  
[math.DG, math-ph, math.MP]

#### Network's collaborators

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Theodore D. Drivas, Daniil Glukhovskiy and Boris Khesin: *Pensive billiards, point vortices, and pucks*.  
2408.03279  
[math.DS, math-ph, math.MP, math.SG, physics.flu-dyn]

Darryl Holm, Wei Pan and James Woodfield: *Comparing two different types of stochastic parametrization in geophysical flow*.  
2408.08937  
[physics.flu-dyn, math-ph, math.MP]

Damien Calaque: *Not too little intervals for quantum mechanics*.  
2408.10033  
[math.QA, math-ph, math.MP]

M. Baradaran, L. M. Nieto and S. Zarrinkamar: *Dirac Equation with Space Contributions Embedded in a Quantum-Corrected Gravitational Field*.  
2408.10598  
[quant-ph, math-ph, math.MP]

Federico Finkel and Artemio González-López: *Thermodynamics and criticality of supersymmetric spin chains of Haldane-Shastry type*.  
2408.14444  
[cond-mat.stat-mech, math-ph, math.MP, quant-ph]

Rafael Dahmen, Karl-Hermann Neeb and Alexander Schmeding: *On the singularities of the exponential function of a semidirect product*.  
2408.15053  
[math.GR, math-ph, math.MP]

## Links of interest

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Geometry, Dynamics and Field Theory Network

Journal “Geometric Mechanics”

International Mathematical Union (IMU) Newsletter - July 2024

Instituto de Ciencias Matemáticas (ICMAT) Newsletter - July 2024

International Association of Mathematical Physics Bulletin - July 2024

European Mathematical Society

Royal Spanish Mathematical Society (RSME)

International Association of Mathematical Physics

International Centre for Theoretical Physics (ICTP)

European Research Council

European Commission - Research and Innovation

International Center of Pure and Applied Mathematics (CIMPA)

Mathematical and physical sciences funding, National Science Foundation, USA

Open Access Mathematics Journals

Open Access American Institute of Mathematical Sciences (AIMS) Journal

Open Access Physics Journals

Societat Catalana de Matemàtiques (SCM) journal on Mathematics

SIAM Activity Groups award various prizes

International Mathematical Union Awards and Prizes

Other Prizes of International Mathematical Union

American Mathematical Society Prizes and Awards

Mathematical Association of America Awards

Association for Women in Mathematics Awards

IEEE Control Systems Society Awards

Royal Society of London Premier Medals and Awards

London Mathematical Society Prizes

The Shaw Prize

The Henri Poincaré Prize

The British Royal Society Grants

The British Royal Society's medals and award

NOTE: If you want to include information in this info-sheet, please send it to [gmcactivities@gmail.com](mailto:gmcactivities@gmail.com)