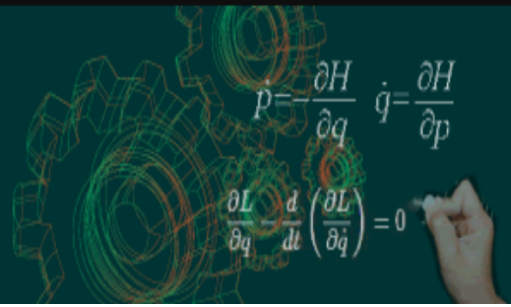




# GMC Network



## *Geometry, Mechanics and Control Network Infosheet*

September 2023

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### Network's activities

**“deLeonfest 2023”:** An interdisciplinary conference on Geometric Mechanics and Related Fields.  
11–13 December 2023, Madrid, Spain.

### Other conferences

**Fluid Equations, A Paradigm for Complexity: Regularity vs Blow-up, Deterministic vs Stochastic.**  
1–6 October 2023, Banff, Canada.

**International Conference on Mathematical Physics, and Applications.**  
2–3 October 2023, Beijing, China.

**2nd International Conference on Advanced Physics and Quantum Physics.**  
2–4 October 2023, Vienna, Austria.

**Marvellous Event on Geometric Analysis.**  
8–13 October 2023, Bedlewo, Poland.

**Complex Lagrangians, Mirror Symmetry, and Quantization.**  
15–20 October 2023, Banff, Canada.

**Lagrangian Multiform Theory and Pluri-Lagrangian Systems.**  
22–27 October 2023, Banff, Canada.

**Control of PDEs Models for Living Systems.**  
22–27 October 2023, Oberwolfach, Germany.

**VI Workshop on Fluids and PDE.**  
23–27 October 2023, Campinas, Brazil.

**Differential Galois Theory and Applications to Mechanics (CIMPA School).**  
23 October–3 November 2023, Santo Domingo, Dominican Republic.

**On Symmetries of Differential and Difference Equations and Their Applications.**  
25–27 October 2023, Stellenbosch, South Africa.

**9th International Conference of Control Theory and Computer Modelling.**

28–29 October 2023, Vienna, Austria.

**Mini-Workshop: Standard Subspaces in Quantum Field Theory and Representation Theory.**

29 October–3 November 2023, Oberwolfach, Germany.

**Infinite Dimensional Geometry and Fluids.**

5–10 November 2023, Banff, Canada.

**International Conference on Continuum Mechanics.**

6–7 November, 2023, Cape Town, South Africa.

**International Conference on Mathematics and Theoretical Physics.**

6–7 November, 2023, San Francisco, USA.

**Recent advances in geometric analysis.**

6–10 November 2023, Luminy, France.

**Small scale dynamics in incompressible fluid flows.**

6–10 November 2023, Pasadena, USA.

**Emergent Hydrodynamics of Integrable Systems and Soliton Gases.**

13–17 November 2023, Luminy, France.

**Mathematical billiards: at the crossroads of dynamics, geometry, analysis, and mathematical physics.**

13–17 November 2023, New York, USA.

**International Multibody Dynamics Conference.**

15–16 November 2023, Munich, Germany.

**International Conference on Continuum Mechanics and Conservation Laws.**

27–28 November 2023, Singapore, Singapore.

**Vortex Dynamics: the Crossroads of Mathematics, Physics and Applications.**

3–8 December 2023, Banff, Canada.

**International Conference on Symplectic Geometry in Physics.**

4–5 December 2023, Kuala Lumpur, Malaysia.

**International Conference on Physics and Symplectic Geometry.**

4–5 December 2023, Tokyo, Japan.

**8th Iberoamerican Congress on Geometry.**

10–15 December 2023, Pucón, Chile.

**Indian Control Conference.**

18–20 December 2023, Visakhapatnam, India.

**Equivariant methods in geometry.**

8–12 January 2024, Cambridge, United Kingdom.

**Winter School in Mathematical Physics.**

7–12 January 2024, Les Diablerets, Switzerland.

**Spectral Analysis for Quantum Hamiltonians.**

15–19 January 2024, Luminy, France.

**Discrete Geometry.**

21–26 January 2024, Oberwolfach, Germany.

**Conformal field theory 3 ways: integrable, probabilistic, and supersymmetric.**

21–26 January 2024, Les Diablerets, Switzerland.

**Numerical PDEs: Analysis, Algorithms, and Data Challenges.**

29 January–3 May 2024, Providence, USA.

**International Conference on Mathematical Physics, and Applications.**

2–3 February 2024, Rio de Janeiro, Brazil.

**Phase Mixing, Kinetic Theory and Fluid Mechanics.**

4–9 February 2024, Les Diablerets, Switzerland.

**Lectures on Statistical Field Theories.**

5–16 February 2024, Firenze, Italy.

**Texas Analysis and Mathematical Physics Symposium.**

9–11 February 2024, Texas, USA.

**Interfaces, Free Boundaries and Geometric Partial Differential Equations.**

11–16 February 2024, Oberwolfach, Germany.

**Numerical Analysis of Multiphysics Problems.**

12–16 February 2024, Providence, USA.

**Structured Machine Learning and Time-Stepping for Dynamical Systems.**

18–23 February 2024, Banff, Canada.

**International Conference on Mathematical Physics, and Applications.**

19–20 February 2024, Paris, France.

**International Conference on Mathematical Physics, and Applications.**

26–27 February 2024, Sydney, Australia.

**VIII Latin American Workshop on Optimization and Control.**

26 February–1 March 2024, Córdoba, Argentina.

**Mini-Workshop: Skew Braces and the Yang–Baxter Equation.**

26 February–4 March 2024, Oberwolfach, Germany.

**Mini-Workshop: Free Boundary Problems Arising in Fluid Mechanics.**

26 February–4 March 2024, Oberwolfach, Germany.

**Conformal Field Theory, Integrability, and Geometry.**

11–15 March 2024, New York, USA.

**PDEs and Geometry: Numerical Aspects.**

11–15 March 2024, Providence, USA.

**Workshop on New Directions in Conformal Field Theory.**

18–22 March 2024, Toronto, Canada.

**Statistical Mechanics and Discrete Geometry.**

25–29 March 2024, Los Angeles, USA.

## Online course

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**Equivariant methods in geometry.**

8–12 January 2024, Cambridge, United Kingdom.

## Virtual seminars

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**Online Seminar of the Geometry, Mechanics and Control Thematic Network.**

Instituto de Ciencias Matemáticas' seminars on these topics.

**Mathematics and High Energy Physics Seminars.**

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

**One World IAMP Mathematical Physics Seminar.**

Seminar of International Association of Mathematical Physics.

**Virtual Seminar on Geometry with Symmetries.**

On the topic of 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.

## Job offers, fellowships and supports

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### Ph.D. offers

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**PhD position in Control of Aerial Robots.**

University of Luxembourg, Kirchberg, Luxembourg  
Closing date: 9 October 2023.

**PhD position in Many Body Quantum Systems.**

Technical University of Munich, Munich, Germany  
Closing date: 15 October 2023.

**PhD candidate in Tensor Calculus.**

Czech Technical University, Prague, Czech Republic  
Closing date: 25 October 2023.

**PhD position in Nonlinear Data-driven Control.**

KTH Royal Institute of Technology, Stockholm, Sweden

Closing date: 27 October 2023.

**PhD position in Analysis of PDEs .**

TU Delft, Delft, Netherlands  
Closing date: 1 November 2023.

**3 PhD positions in Robotics.**

Eindhoven University of Technology, Eindhoven, Netherlands  
Closing date: 1 November 2023.

**PhD positions in Mathematics.**

University of Copenhagen, Copenhagen, Denmark

Closing date: 15 November 2023.

**PhD positions in Mathematics.**

Berlin Mathematical School, Berlin, Germany

Closing date: 1 December 2023.

**PhD position in Optimization of Heat Ex-**

**Postdoctoral fellowships**

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**Postdoctoral position in Mathematical General Relativity.**

The University of Edinburgh, Edinburgh, United Kingdom

Closing date: 8 October 2023.

**Postdoctoral position in Complex and Symplectic Geometry.**

University of Florence, Florence, Italy

Closing date: 17 October 2023.

**Postdoctoral position in Variational Principles.**

University of Freiburg, Freiburg, Germany

Closing date: 15 October 2023.

**Research fellowship in Hydrodynamics.**

University of Surrey, Guildford, United Kingdom

Closing date: 30 October 2023.

**Postdoctoral positions in Mathematics.**

Aarhus University, Aarhus, Denmark

Closing date: 31 October 2023.

**Postdoctoral positions in Geometric Variational Principles.**

University of Vienna, Vienna, Austria

Closing date: 5 November 2023.

**Postdoctoral positions in IST-BRIDGE program.**

**Offers for researchers**

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**Two Tenure-track positions in Geometry or Topology .**

University of Missouri, Columbia (MI), United States of America

Closing date: 1 October 2023.

**Tenured professor in Mathematics.**

Stony Brook University, Stony Brook (NY), United States of America

Closing date: 5 October 2023.

**Full Professor in Computational PDE.**

Murdoch University, Perth, Australia

Closing date: 18 October 2023.

**Assistant Professor in Mathematical Physics.**

**change.**

KU Leuven, Leuven, Belgium

Closing date: Open Until Filled.

**PhD positions.**

TU Delft, Delft, The Netherlands

Closing date: Open until filled.

The Institute of Science and Technology Austria, Klosterneuburg, Austria

Closing date: 11 November 2023.

**Postdoctoral positions in Mathematics.**

Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany

Closing date: 30 November 2023.

**Two Postdoctoral positions as Milnor Lecturer.**

Stony Brook University, Stony Brook (NY), United States of America

Closing date: 30 November 2023.

**Postdoctoral position in Quantum Mathematics.**

University of Southern Denmark, Odense, Denmark

Closing date: 1 December 2023.

**Postdoctoral positions in Mathematics.**

Tsinghua University, Beijing, China

Closing date: 1 March 2024.

**Humboldt research fellowship for postdoctoral researchers.**

Alexander von Humboldt Foundation

Closing date: Open.

University of California San Diego, La Jolla (CA), United States of America

Closing date: 23 October 2023.

**Tenure-track positions in Mathematics.**

The Institute of Science and Technology Austria, Klosterneuburg, Austria

Closing date: 25 October 2023.

**Professor position in Mathematics.**

University of Fribourg, Fribourg, Switzerland

Closing date: 31 October 2023.

**Assistant Professor in Differential/Algebraic Geometry.**

University of South Florida, Tampa (FL), United States of America

Closing date: 6 November 2023.

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

University of North Carolina, Chapel Hill (NC), United States of America

### **Offers for visiting researchers**

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

International Mathematical Union.

Postdoctoral mathematician to visit a research collaborator for a month.

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

#### **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.

### **Financial support**

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#### **IMU Conference support program.**

For conferences in developing or economically disadvantaged countries.

Deadline: 1 October 2023, 15 April 2024 and 15 July.

#### **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 every year.

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

Mathematical Sciences Research Institute, Berkeley, United States.

Closing date: 12 November 2023.

#### **Professor of Mathematics.**

Harvard University, Cambridge (MA), United States of America

Closing date: 1 December 2023.

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.

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

#### **CIMPA Schools call for proposals.**

Research schools in developing countries.

Deadline: 10 October 2023.

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

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

Deadline: 15 March, 1 June 2024, and 1 September 2023.

#### **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.

### Hosting a workshop at AIMS South Africa.

Contributions for workshops about AIMS's research focus areas.

**Deadline:** No precise deadline.

## Interesting new publication

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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.

## Preprints

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### Network's members

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Pol Mestres and Jorge Cortés: *Distributed and Any-time Algorithm for Network Optimization Problems with Separable Structure.*

2309.03174

[math.OC]

Kevin Constantineau, Carlos García-Azpeitia, Luis C. García-Naranjo and Jean-Philippe Lessard: *Determination of stable branches of relative equilibria of the  $N$ -vortex problem on the sphere.*

2309.04320

[math.DS, math-ph, math.MP]

Florio M. Ciaglia, Fabio Di Cosmo, Laura González-Bravo, Alberto Ibort and Giuseppe Marmo: *On the categorical foundations of quantum information theory: Categories and the Cramer-Rao inequality.*

2309.10428

[quant-ph, cs.IT, math-ph, math.IT, math.MP]

L. C. García-Naranjo, J. C. Marrero, D. Martín de Diego and E. P. Petit Valdés: *Almost-Poisson brackets for nonholonomic systems with gyroscopic terms and Hamiltonisation.*

2309.11597

[math-ph, math.MP]

Ángel Ballesteros, Romina Ramírez and Marta Reboiro: *Non-standard quantum algebras and finite dimensional  $\mathcal{PT}$ -symmetric systems.*

2309.15305

[quant-ph, math-ph, math.MP]

### Network's collaborators

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Du Li, Leonid Ryvkin, Arne Wessel and Chenchang Zhu: *Differentiating  $L_\infty$  groupoids – Part I.*

2309.00901 (version 2)

[math.DG]

Jean-Pierre Gazeau, Mariano A. del Olmo and Hamed Pejhan: *Unitary-Preserving Holography in  $dS_d$ .*

2309.02122

[math-ph, hep-th, math.MP]

A. N. W. Hone, J. A. G. Roberts and P. Vanhaecke: *A family of integrable maps associated with the Volterra lattice.*

2309.02336

[nlin.SI, math-ph, math.MP]

*duality of super  $r$ -matrices via  $\mathcal{O}$ -operators and pre-Lie superalgebras.*

[math.QA, math-ph, math.MP]

Anand Gokhale, Alexander Davydov and Francesco Bullo: *Contractivity of Distributed Optimization and Nash Seeking Dynamics.*

2309.05873 (version 2)

[math.OC, cs.SY, eess.SY]

Yohan John, Connor Hughes, Gilberto Díaz-García, Jason R. Marden and Francesco Bullo: *RoSSO: A High-Performance Python Package for Robotic Surveillance Strategy Optimization Using JAX.*

2309.08742

[cs.RO, math.OC]

Andrew Clarke and Rafael Ramírez-Ros: *Chaotic properties for billiards in circular polygons.*



2309.09892

[math.DS, nlin.CD]

Margarida Carvalho, Alison Caulfield, Yi Lin and Adrian Vetta: *Penalties and Rewards for Fair Learning in Paired Kidney Exchange Programs.*

2309.13421

[math.OC, cs.AI, cs.LG]

Henrique Bursztyn and Matias del Hoyo: *Lie Groupoids.*

2309.14105

[math.DG, math-ph, math.MP]

Markus Schlarb, Knut Hüper, Irina Markina and Fátima Silva Leite: *Rolling Stiefel manifolds equipped with*

*-metrics.*

2309.14854

[math.DG]

Yi Lin and David Miyamoto: *Riemannian foliations and quasifolds.*

2309.15166

[math.DG]

Óscar García-Prada: *Kähler-Yang-Mills equations and vortices.*

2309.15673

[math.DG]

## Links of interest

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Geometry, Mechanics and Control Network

Journal “Geometric Mechanics”

International Mathematical Union (IMU)  
Newsletter - September 2023

Instituto de Ciencias Matemáticas (ICMAT)  
Newsletter - July 2023

International Association of Mathematical  
Physics Bulletin - July 2023

European Mathematical Society

Royal Spanish Mathematical Society (RSME)

International Association of Mathematical  
Physics

Open Access American Institute of Mathematical  
Sciences (AIMS) Journal

International Centre for Theoretical Physics  
(ICTP)

European Research Council

European Commission - Research and Innova-  
tion

International Center of Pure and Applied  
Mathematics (CIMPA)

Mathematical and physical sciences funding,  
National Science Foundation, USA

Open Access Mathematics Journals

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 Poincarè Prize

European Mathematical Society Funding and  
Sponsorship

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