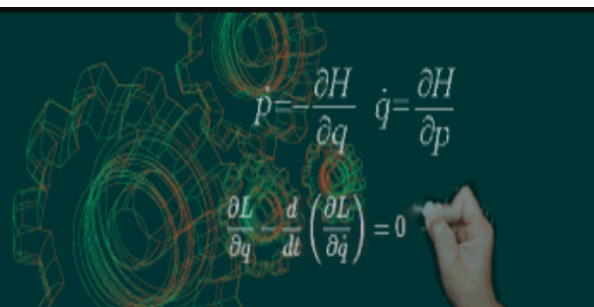




# GMC Network



## *Geometry, Mechanics and Control Network Infosheet*

December 2021

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### Network's activities

**Winter Workshop on Geometry, Mechanics and Control (Face-to-face).**

24–25 January 2022, Zaragoza, Spain.

**VII Iberoamerican Meeting on Geometry, Mechanics and Control (Virtual format).**

9–11 March 2022, Bahía Blanca, Argentina.

### Virtual seminars

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

Instituto de Ciencias Matemáticas' seminars on these topics.

**Online Seminar on Geometry, Dynamics and Mechanics.**

A series of online seminars on these topics.

**Colloquium on Geometry and Physics.**

Online colloquium about interface of the two fields.

**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.

**Utrecht Geometry Centre Seminar.**

Mathematical Institute, Utrecht University.

**Differential Geometry Seminar Torino.**

CRM-Montreal, Princeton/IAS, Tel Aviv, and Paris Seminar.

**Latin American Seminar on Differential Geometry.**

Virtual seminar aims to establish contact with several research groups and mathematicians in Latin America.

**ICMAT Geometry Seminar.**

Instituto de Ciencias Matemáticas' seminars on algebraic and differential geometry.

**Symplectic Zoominar.**

Online Seminar organized by University of Torino.

**Geometry and Topology Online.**

Warwick Mathematics Institute.

**Regensburg Low-Dimensional Geometry and Topology Seminar.**

About arithmetic geometry and global analysis.

**Theory of Duality Seminar.**

Department of Mathematical Methods in Physics, University of Warsaw.

## Conferences

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**Lie Theory and Poisson Geometry Conference.**

10–14 January 2022, Luminy, France.

**Introductory Workshop on Tame Geometry, Transseries and Applications to Analysis and Geometry.**

10–14 January 2022, Toronto, Canada.

**Differential Geometry and its Applications: fluid dynamics, dispersive systems, image processing, and beyond. (Winter School and Workshop Wisla 22). Online.**

24 January–6 February, 2022.

**Calculus of Variations in Probability and Geometry.**

7–11 February 2022, Los Angeles, USA.

**12th International Conference on Applied Physics and Mathematics.**

18–20 February 2022, Singapore.

**Geometric Structures in Group Theory.**

27 February–5 March 2022, Oberwolfach, Germany.

**Foliations, pseudodifferential operators and groupoids.**

28 February–4 March 2022, Göttingen, Germany.

**Differential Geometry and Integrable Systems.**

1–21 March 2022, Osaka, Japan.

**Interactions of gauge theory with contact and symplectic topology in dimensions 3 and 4.**

6–11 March 2022, Banff, Canada.

**Advancing Quantum Mechanics with Mathematics and Statistics.**

7 March–10 June 2022, Los Angeles, USA.

**Recent Development in Representation Theory and Mathematical Physics.**

20–26 March 2022, Oberwolfach, Germany.

**Braids in Symplectic and Algebraic Geometry.**

21–25 March 2022, Providence, USA.

**Geometry and Analysis on Non-Compact Manifolds.**

28 March–1 April 2022, Luminy, France.

**Multiscale Approaches in Quantum Mechanics.**

28 March–1 April 2022, Los Angeles, USA.

**Symplectic singularities in geometry and representation theory.**

4–8 April 2022, Luminy, France.

**Model Reduction in Quantum Mechanics.**

11–15 April 2022, Los Angeles, USA.

**Large-Scale Certified Numerical Methods in Quantum Mechanics.**

2–6 May 2022, Los Angeles, USA.

**Monte Carlo and Machine Learning Approaches in Quantum Mechanics.**

23–27 May 2022, Los Angeles, USA.

**Poisson Geometry, Lie Groupoids and Differentiable Stacks.**

5–10 June 2022, Banff, Canada.

**Great Lakes Mathematical Physics Meeting.**

9–12 June 2022, Michigan, USA.

**Mathematical and Conceptual Aspects of Quantum Theory.**

12–17 June 2022, Oaxaca, Mexico.

**Geometric and Variational Methods in Celestial Mechanics.**

19–24 June 2022, Banff, Canada.

**VI International Conference on Finite Dimensional Integrable Systems in Geometry and Mathematical Physics.**

20–24 June 2022, Tel-Aviv, Israel.

**Summer Graduate School on Geometric Flows.**

20 June–1 July 2022, Athens, Greece.

**Mathematical Physics, Geometry and Integrability.**

26 June–2 July 2022, Moscow, Russia.

**Job offers, fellowships and supports**

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**Ph.D. offers**

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**PhD positions.**

University of Bielefeld, Bielefeld, Germany

Closing date: 3 January 2022.

**Doctoral Positions in Mathematics.**

RWTH Aachen University, Aachen, Germany

Closing date: 30 January 2022.

**Several PhD scholarships.**

University of Göttingen, Göttingen, Germany

Closing date: 1 February 2022.

**PhD position in Algorithms.**

Technical University of Munich, Munich, Germany

Closing date: 27 February 2022.

**Ph.D. Studentship in Numerical Analysis.**

Charles University, Prague, Czech Republic

Closing date: 7 March 2022.

**3 PhD positions in Geometry, Probability, and Deep Learning.**

NTU Singapore, Singapore

Closing date: Open until filled.

**PhD in stochastic geometric mechanics.**

Wilfrid Laurier University, Waterloo, Canada

Closing date: Open until filled.

**PhD positions.**

TU Delft, Delft, The Netherlands

Closing date: Open until filled.

**Postdoctoral fellowships**

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**Postdoc in Ergodic Theory and Dynamical Systems.**

University of Zurich, Zurich, Switzerland

Closing date: 7 January 2022.

**Postdoc in Mathematical Analysis of PDEs.**

Delft University of Technology, Delft, Netherlands

Closing date: 9 January 2022.

**3 Postdoctoral Researchers in Mathematics.**

Paderborn University, Paderborn, Germany

Closing date: 14 January 2022.

**Postdoc in Algebraic Geometry.**

KTH Royal Institute of Technology, Stockholm, Sweden

Closing date: 16 January 2022.

**Postdoctoral Fellowship in Special Functions and Random Walks.**

BCAM, Bilbao, Spain

Closing date: 17 January 2022.

**Postdoctoral Positions.**

CRM, Barcelona, Spain

Closing date: 30 January 2022.

**Post-doctoral position in PDEs with randomness.**

Sorbonne Université, Paris, France

Closing date: 31 January 2022.

**Postdoctoral Research Scientist in Numerical Analysis.**

Charles University, Prague, Czech Republic

Closing date: 7 March 2022.

**3 postdoc positions in Geometry, Probability, and Deep Learning.**

NTU Singapore, Singapore

Closing date: Open until filled.

**Postdoctoral fellowships in algebraic geometry and mathematical sciences.**

Harvard University, Massachusetts, United States

Closing date: Open until filled.

**Postdoctoral positions in Mathematics.**

Einstein Institute of Mathematics, Jerusalem, Israel

Closing date: Open until filled.

**Humboldt research fellowship for postdoctoral researchers.**

Alexander von Humboldt Foundation

Closing date: Open.

**Lisa Meitner program.**

FWF Austrian Science Fund, Vienna, Austria

Closing date: Open.

**Funded postdoctoral fellowship.**

University of Reading, United Kingdom

Closing date: Open.

## Offers for researchers

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### **Assistant Professor in Geometry and Mathematical Physics.**

The University of Hong Kong, Hong Kong  
Closing date: 27 February 2022.

### **Associate Professor of Complex Systems.**

University Of Oxford, Oxford, United Kingdom  
Closing date: 4 January 2022.

### **Assistant Professor in Mathematics.**

Delft University of Technology, Delft, Netherlands  
Closing date: 10 January 2022.

### **Assistant Professor.**

PUC-Rio, Rio de Janeiro, Brazil  
Closing date: 24 January 2022.

### **Junior Group-Leader.**

Austrian Academy of Sciences, Vienna, Austria  
Closing date: 30 January 2022.

### **Assistant Professor in Mathematical Models.**

Delft University of Technology, Delft, Netherlands  
Closing date: 30 January 2022.

### **Associate Professor.**

Università di Milano-Bicocca, Milano, Italy  
Closing date: 13 February 2022.

### **Associate Senior Lecturer.**

Lund University, Lund, Sweden  
Closing date: 14 February 2022.

### **Tenure-track Assistant Professor.**

California State University, Fresno, United States  
Closing date: 1 May 2022.

## Offers for visiting researchers

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### **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.

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

International Mathematical Union.  
Postdoctoral mathematician to visit a research collaborator for a month.  
Closing date: 30 April, 31 August, and 31 December..

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

Mathematics Department-KSU, Ohio, USA.  
Visiting for scholar researchers.  
Closing date: Open.

## Financial support for research projects and conferences

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### **IAMP supported conferences.**

International Association of Mathematical Physics.  
Deadline: January 1st..

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

Mathematical Sciences Research Institute, Berkeley, United States.  
Deadline: 1 March, 1 de October, and 1 December.

Three years ahead.

### Hot topics Workshop at MSRI.

Mathematical Sciences Research Institute, Berkeley, United States.

Deadline: 1 March, 1 de October, and 1 December..

### Summer graduate schools at MSRI.

Mathematical Sciences Research Institute, Berkeley, United States.

Deadline: 1 March, 1 de October, and 1 December..

### 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.

### International Mathematical Union - Conference support program.

For conferences in developing or economically disadvantaged countries.

Deadline: Several calls.

## Interesting news and publications

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*Geometric and numerical analysis of nonholonomic systems.* **PhD Thesis.**

Author: Alexandre Anahory Simoes.

Advisors: David Martín de Diego and Juan Carlos Marrero.

Place: Universidad Autónoma de Madrid, Spain.

Date: 26 November 2021.

*Geometrical aspects of contact mechanical systems and field theories.* **PhD Thesis.**

Author: Xavier Rivas.

Advisors: Narciso Román-Roy and Xavier Gràcia Sabaté.

Place: Universitat Politècnica de Catalunya, Spain.

Date: 17 December 2021.

## Preprints

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### Network's members

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Leonardo J. Colombo, Manuel de León, María Emma Eyrea Irazú and Asier López-Gordón: *Symplectic and cosymplectic reduction for simple hybrid forced mechanical systems with symmetries.*

2112.02573

[eess.SY, cs.SY, math.DS, math.SG]

José Luis Carmona Jiménez and Marco Castrillón López: *The homogeneous geometries of complex hyperbolic space.*

2112.05453

[math.DG]

Pio Ong, Beatrice Capelli, Lorenzo Sabattini and Jorge Cortés: *Nonsmooth Control Barrier Function Design of Continuous Constraints for Network Connectivity Maintenance.*

2112.05935

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

Miguel-C. Muñoz-Lecanda: *Newtonian mechanics in a Riemannian manifold.*

2112.10171

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

### Network's collaborators

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Miquel Cueva and Chenchang Zhu: *Shifted symplectic higher Lie groupoids and classifying spaces.*

2112.01417

[math.DG, math.SG]

Yannick Privat, Rémi Robin and Mario Sigalotti: *Optimal shape of stellarators for magnetic confinement fusion.*

2112.05049

[math.OC, physics.plasm-ph]

Saber Jafarpour, Matthew Abate, Alexander Davydov, Francesco Bullo and Samuel Coogan: *Robustness Certificates for Implicit Neural Networks: A Mixed Monotone Contractive Approach*.

2112.05310

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

Carlos Heredia, Ivan Kolář, Josep Llosa, Francisco José Maldonado Torralba and Anupam Mazumdar: *Infinite-derivative linearized gravity in convolutional form*.

2112.05397

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

Yacine Chitour, Guilherme Mazanti, Pierre Monmarché and Mario Sigalotti: *On the gap between deterministic and probabilistic Lyapunov exponents for continuous-time linear systems*.

2112.07005

[math.OC, math.DS, math.PR]

Abolfazl Lavaei, Luigi Di Lillo, Andrea Censi and Emilio Frazzoli: *Formal Estimation of Collision Risks for Autonomous Vehicles: A Compositional Data-Driven Approach*.

2112.07187

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

J. W. Burby, E. Hirvijoki and M. Leok: *Nearly-periodic maps and geometric integration of non-canonical Hamiltonian systems*.

2112.08527

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

Alexey V. Bolsinov, Andrey Yu. Konyaev and Vladimir S. Matveev: *Applications of Nijenhuis geometry III: Frobenius pencils and compatible non-homogeneous Poisson structures*.

2112.09471

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

Francesco D'Andrea, Giovanni Landi and Fedele Lizzi: *Tolerance Relations and Quantization*.

2112.09698

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

Thomas Gallouët, Roberta Ghezzi and François-Xavier Vialard: *Regularity theory and geometry of unbalanced optimal transport*.

2112.11056

[math.OC]

François Gay-Balmaz and Cesare Tronci: *Evolution of hybrid quantum-classical wavefunctions*.

2112.12144

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

Julia Cen, Francisco Correa, Andreas Fring and Takanobu Taira: *Stability in integrable nonlocal nonlinear equations*.

2112.12206

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

## Links of interest

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**Geometry, Mechanics and Control Network**

**Journal of Geometric Mechanics - December 2021, Volume 13, Issue 4**

**International Mathematical Union (IMU) Newsletter - November 2021**

**Instituto de Ciencias Matemáticas (ICMAT) Newsletter - First semester 2021, Number 21**

**International Association of Mathematical Physics Bulletin - October 2021**

**European Mathematical Society**

**Royal Spanish Mathematical Society (RSME)**

**International Association of Mathematical Physics**

**Open Access American Institute of Mathematical Sciences (AIMS) Journal**

**Euraxess Spain**

**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 Physics Journals**

**Societat Catalana de Matemàtiques (SCM) journal on Mathematics**

**SIAM Activity Group on Control and Systems Theory Prize**

**SIAM Activity Group on Control and Systems Theory Best SICON Paper Prize**

**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**

**European Mathematical Society Prizes**

**European Mathematical Society Funding and Sponsorship**

**The Royal Society Grants**

**The Royal Society's medals and award**

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