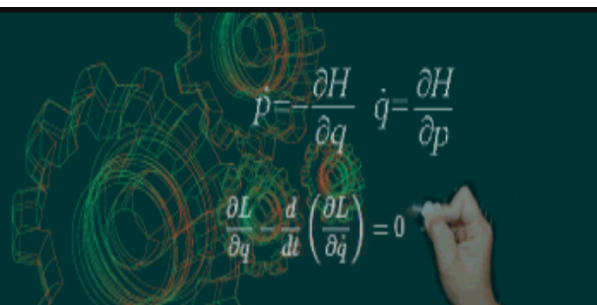




# GMC Network



## *Geometry, Mechanics and Control Network Infosheet*

January 2022

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### Network's activities

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

7–11 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****Conferences**

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**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.

**Supergeometry and Bracket Structures in Mathematics and Physics.**

21 – 25 March 2022, Toronto, Canada.

**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.****Topology Seminar.**

About arithmetic geometry and global analysis.

**Theory of Duality Seminar.**

Department of Mathematical Methods in Physics, University of Warsaw.

4 – 8 April 2022, Luminy, France.

**Model Reduction in Quantum Mechanics.**

11 – 15 April 2022, Los Angeles, USA.

**Energy-Based Modeling, Simulation, and Control of Complex Constrained Multiphysical Systems.**

18 – 22 April 2022, Luminy, France.

**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.

**Theoretical and numerical trends in inverse problems and control for PDE's, and Hamilton-Jacobi equation.**

13–17 June 2022, Luminy, France.

**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.

**Optimization, Simulation and Control.**

20–22 June 2022, Ulaanbaatar, Mongolia.

**Summer Graduate School on Geometric Flows.**

20 June–1 July 2022, Athens, Greece.

**Spectral Theory and Mathematical Physics.**  
22 June–26 June 2022, Saint Petersburg, Russia.

**Mathematical Physics, Geometry and Integrability.**  
26 June–2 July 2022, Moscow, Russia.

**The 34th International Colloquium on Group Theoretical Methods in Physics.**

18–22 July 2022, Strasbourg, France.

**Geometry and Physics of ALX Metrics in Gauge Theory.**  
25–29 July 2022, California, USA.

**Moduli Spaces and Vector Bundles — New Trends.**  
25–29 July 2022, Coventry, United Kingdom.

## Job offers, fellowships and supports

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### Ph.D. offers

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**Several PhD scholarships.**  
University of Goettingen, Goettingen, Germany  
Closing date: 1 February 2022.

**PhD student positions in mathematics.**  
University of Gothenburg, Gothenburg, Sweden  
Closing date: 24 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.

**PhD position in Mathematics.**  
Umea Universitet, Umea, Sweden

Closing date: 11 March 2022.

**PhD position in Mathematics.**  
Delft University of Technology, Delft, Netherlands  
Closing date: 16 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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**Postdoctoral Fellowship in Computational Mathematics.**  
BCAM, Bilbao, Spain  
Closing date: 15 February 2022.

**Postdoctoral position in evolution differential equations.**  
Czech Academy of Sciences, Prague, Czech Republic  
Closing date: 28 February 2022.

**Postdoctoral Research Scientist in Numerical Analysis.**  
Charles University, Prague, Czech Republic  
Closing date: 7 March 2022.

**Postdoc position in PDEs.**  
Ecole Normale Supérieure de Rennes, Rennes, France  
Closing date: 14 March 2022.

**Postdoctoral Fellow.**  
Harvard University, Massachusetts, United States

Closing date: 15 March 2022.

**Postdoctoral Fellowship in Mathematics.**  
Pohang University of Science and Technology, Pohang, Korea  
Closing date: 15 March 2022.

**Postdoctoral Fellow in Mathematics.**  
University of Toronto, Toronto, Canada  
Closing date: 30 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.

**Offers for researchers**

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**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.

**Senior Research Fellow .**

Curtin University, Perth, Australia

Closing date: 24 February 2022.

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

The University of Hong Kong, Hong Kong

Closing date: 27 February 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.

**Lisa Meitner program.**

FWF Austrian Science Fund, Vienna, Austria

Closing date: Open.

**Funded postdoctoral fellowship.**

University of Reading, United Kingdom

Closing date: Open.

**Assistant Professor in Mathematics.**

Trinity College Dublin, Dublin, Ireland

Closing date: 7 March 2022.

**Professorship of Quantum Physics.**

University of Cambridge, Cambridge, UK

Closing date: 7 March 2022.

**Assistant Professor in Pure Mathematics.**

University of Durham, Durham, UK

Closing date: 10 March 2022.

**Tenure-track Assistant Professor.**

California State University, Fresno, United States

Closing date: 1 May 2022.

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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### 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.

## Preprints

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### Network's members

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Zhenyi Yuan and Jorge Cortés: *Data-Driven Optimal Control of Bilinear Systems*.

2112.15510

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

Jacob R. Goodman: *Local Minimizers for Variational Obstacle Avoidance on Riemannian manifolds*.

2201.04395

[math.OC, math.DG]

Marco Castrillón López and Álvaro Rodríguez Abella: *Principal bundles and connections modelled by Lie group bundles*.

2201.07088

[math.DG]

Rodrigo T. Sato Martín de Almagro: *High-order integrators for Lagrangian systems on homogeneous spaces via nonholonomic mechanics*.

2201.12022

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

J. Fernando Barbero G., Juan Margalef-Bentabol, Valle Varo and Eduardo J. S. Villaseñor: *On the on-shell equivalence of general relativity and Holst theories with nonmetricity, torsion, and boundaries*.

2201.12141

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

### Network's collaborators

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Amaury Hayat, Benedetto Piccoli and Shengquan Xiang: *Stability of multi-population traffic flows*.

2201.00381

[math.OC, physics.soc-ph]

Xiao Han, Giovanni Landi and Yang Liu: *Hopf algebroids from noncommutative bundles*.

2201.01612

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

R. Camassa, R. D'Onofrio, G. Falqui, G. Ortenzi and M. Pedroni: *Evolution of interface singularities in shallow water equations with variable bottom topography*.

2201.01619

[math-ph, math.MP, nlin.SI, physics.flu-dyn]

Christian Blohmann, Michele Schiavina and Alan Weinstein: *A Lie-Rinehart algebra in general relativity*.

2201.02883

[math-ph, gr-qc, math.DG, math.MP, math.SG]

Valentin Duruisseau and Melvin Leok: *Accelerated Optimization on Riemannian Manifolds via Projected Variational Integrators*.

2201.02904

[math.OC]

Giulia De Pasquale, Francesco Bullo and Maria Elena Valcher: *Ergodicity Coefficients are Induced Matrix Seminorms*.

2201.03103

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

Luis Álvarez-Cónsul, Mario García-Fernández, Óscar García-Prada, Vamsi Pritham Pingali and Chengjian Yao: *Obstructions to the existence of solutions of the self-dual Einstein-Maxwell-Higgs equations on a compact surface*.

2201.03455

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

Valentin Duruisseau and Melvin Leok: *Time-adaptive Lagrangian Variational Integrators for Accelerated Optimization on Manifolds*.

2201.03774

[math.OC]

Damien Gobin and Niky Kamran: *A Green's function for the source-free Maxwell equations on  $AdS^5 \times S^2 \times S^3$* .

2201.04743

[math.AP, math-ph, math.MP, math.SP]

Andreas Fring: *An introduction to PT-symmetric quantum mechanics – time-dependent systems*.

2201.05140

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

Fabio Gironella, Vicente Muñoz and Zhengyi Zhou: *Asymptotically holomorphic theory for symplectic orbifolds*.

2201.09362

[math.SG, math.AT, math.DG]

## 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**

**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**

**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 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 [gmactivities@gmail.com](mailto:gmactivities@gmail.com)**