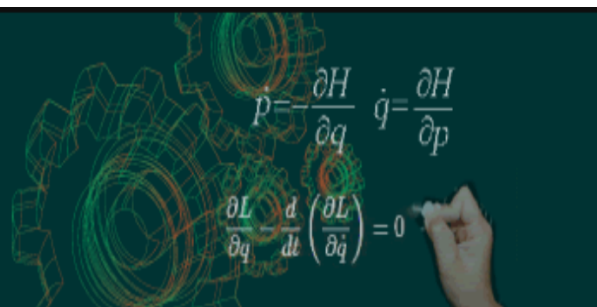# GMC Network

## Geometry, Mechanics and Control Network Infosheet

**March 2022**

**Editors**: Viviana Díaz, Iván Gutiérrez, Rodrigo Sato

### CONTENTS

## Network's activities

**14th International Summer School on Geometry, Mechanics and Control.**
4–8 July 2022, Burgos, Spain.

## 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.

**Global Poisson Webinar.**
CRM-Montreal, Princeton/IAS, Tel Aviv, and Paris Seminar.

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

**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 CRM-Montréal, Princeton/IAS, Tel Aviv, and Paris.

**ICTP Virtual Seminars.**
Online Seminar organized by International Centre for Theoretical Physics.

**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

**Symplectic singularities in geometry and representation theory.**
4 – 8 April 2022, Luminy, France.

**Model Reduction in Quantum Mechanics.**
11 – 15 April 2022, Los Ángeles, 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 Ángeles, USA.

**Strings and Geometry.**
2 – 5 May 2022, Uthecht, Netherlands.

**Control and Inverse Problems.**
9 – 11 May 2022, Monastir, Tunisia.

**On the Crossroads of Algebra, Geometry, and Physics.**
10 – 20 May 2022, Connecticut, USA.

**Deformations and higher structures.**
16 – 20 May 2022, Vancouver, Canada.

**Monte Carlo and Machine Learning Approaches in Quantum Mechanics.**
23 – 27 May 2022, Los Ángeles, USA.

**Pseudo-Riemannian Geometry and Invariants in General Relativity.**
30 May – 3 June 2022, Stavanger, Norway.

**Poisson Geometry, Lie Groupoids and Differentiable Stacks.**
5–10 June 2022, Banff, Canada.

**Great Lakes Mathematical Physics Meeting.**
9–12 June 2022, Michigan, USA.

**Deep Exploration of non-Euclidean Data with Geometric and Topological Representation Learning.**
10–15 June 2022, Banff, Canada.

**String Math.**
11–15 June 2022, Warsaw, Poland.

**Mathematical and Conceptual Aspects of Quantum Theory.**
12–17 June 2022, Oaxaca, Mexico.

**Recent developments in gauge theory - string theory duality (Online).**
13–17 June 2022, Moscow, Russia.

**Theoretical and numerical trends in inverse problems and control for PDE's, and Hamilton-Jacobi equation.**
13–17 June 2022, Luminy, France.

**Mathematical Challenges in Quantum Mechanics.**
13–18 June 2022, Como, Italy.

**Geometric and Variational Methods in Celestial Mechanics.**
19–24 June 2022, Banff, Canada.

**Geometry, Mechanics and Computation: from Soft Matter to Animation and Beyond.**
19–24 June 2022, Banff, Canada.

**Optimization, Simulation and Control.**
20–22 June 2022, Ulaanbaatar, Mongolia.

**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.

**Physics and Quantum Physics (Hybrid).**

22–23 June 2022, Berlin, Germany.

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

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

**Probability and Mathematical Physics.**
28 June–5 July 2022, Helsinki, Finland.

**41th Benelux Meeting on Systems and Control.**
5–7 July 2022, Brussels, Belgium.

**15th Viennese Conference on Optimal Control and Dynamic Games.**
12– 15 July 2022, Wien, Austria.

**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.

**Driving Global Inference for New Physics with Machine Learning, Big Data and Large-scale Statistical Simulation.**
31 July–5 August 2022, Banff, Canada.

**Frontiers in Geometry and Topology Summer School.**
1–5 August 2022, Trieste, Italy.

**Frontiers in Geometry and Topology Conference.**
8–12 August 2022, Trieste, Italy.

**Calculus of Variations.**
14–20 August 2022, Oberwolfach, Germany.

**Quantum Dynamics: From Electrons to Qbits.**
22 August– 9 September 2022, Trieste, Italy.

**Geometric Structures and Supersymmetry 2022.**
23–26 August 2022, Tromsø, Norway.

**Control and Optimization with Industrial Applications.**
24–26 August 2022, Baku, Azerbaijan.

**Connections Workshop: Analytic and Geometric Aspects of Gauge Theory.**
25–26 August 2022, Berkeley, USA.

**Introductory Workshop: Analytic and Geometric Aspects of Gauge Theory.**
29 August–2 September 2022, Berkeley, USA.

**Quantum Information in many body physics: a mathematical invitation.**
29 August–2 September 2022, Munich, Germany.

**QMATH 15.**
12–16 September 2022, California, USA.

# Job offers, fellowships and supports

## Ph.D. offers

**PhD position.**
University of Goettingen, Goettingen, Germany
<span style="color:red">Closing date: 10 April 2022.</span>

**PhD in symplectic geometry and integrable Hamiltonian systems.**
University of Antwerp, Antwerp, Belgium
<span style="color:red">Closing date: 11 April 2022.</span>

**PhD in dynamical systems and geometric mechanics.**
University of Antwerp, Antwerp, Belgium
<span style="color:red">Closing date: 11 April 2022.</span>

**4 PhD positions in Mathematics.**

Stockholm University, Stockholm, Sweden
<span style="color:red">Closing date: 21 April 2022.</span>

**4 PhD positions in Mathematics.**
University of Vienna, Vienna, Austria
<span style="color:red">Closing date: 30 April 2022.</span>

**PhD positions in Valuations on Convex Functions.**
University of Vienna, Vienna, Austria
<span style="color:red">Closing date: 30 April 2022.</span>

**PhD positions in Combinatorics of Grothendieck Polynomials.**
University of Vienna, Vienna, Austria

**PhD position in cluster algebras and invariants.**
Aarhus University, Aarhus, Denmark
Closing date: 30 April 2022.

**PhD in Analysis of singular and random systems.**
University of Bielefeld, Bielefeld, Germany
Closing date: 15 May 2022.

**PhD in Pure Mathematics.**
University of Antwerp, Antwerp, Belgium
Closing date: 16 May 2022.

**PhD positions in Dynamics, Control and Numerics.**

FAU Erlangen-Nurnberg, Erlangen, Germany
Closing date: 30 December 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

**2 Postdoctoral positions in Mathematics.**
Gran Sasso Science Institute, L'Aquila, Italy
Closing date: 6 April 2022.

**Postdoctoral position in Linear PDE's and Harmonic Analysis.**
University of Sao Paulo, Sao Paulo, Brazil
Closing date: 8 April 2022.

**Postdoctoral position in evolution differential equations.**
Czech Academy of Sciences, Prague, Czech Republic
Closing date: 15 April 2022.

**Postdoctoral positions in Mathematics and Statistics.**
Aarhus University, Aarhus, Denmark
Closing date: 23 April 2022.

**Postdoctoral Fellow in Physical and Mathematical Sciences.**
Stockholm University, Stockholm, Sweden
Closing date: 28 April 2022.

**Postdoctoral position in Mathematics.**
Institute of Science and Technology Austria, Klosterneuburg, Austria
Closing date: 4 May 2022.

**Postdoctoral positions in Dynamics, Control and Numerics.**

FAU Erlangen-Nurnberg, Erlangen, Germany
Closing date: 30 December 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

**Strathclyde Chancellor's Fellow in Scientific Machine Learning.**
University of Strathclyde, Glasgow, United Kingdom

Closing date: 9 April 2022.

**Professorship for Modeling in the Life Sciences.**

Bielefeld University, Bielefeld, Germany
Closing date: 20 April 2022.

**Asssitant Professorship in Stochastics.**
Universität Paderborn, Paderborn, Germany
Closing date: 21 April 2022.

**Lecturer/Senior Lecturer in Applied and Computational Mathematics .**
Monash University, Melbourne, Australia
Closing date: 27 April 2022.

**Lecturer/Senior Lecturer in Algebra.**
Monash University, Melbourne, Australia
Closing date: 27 April 2022.

**Assistant Professor in Applied Analysis .**
Eindhoven University of Technology, Eindhoven, The Netherlands
Closing date: 30 April 2022.

**Tenure-track Assistant Professor.**
California State University, Fresno, United States
Closing date: 1 May 2022.

**Junior group leader with focus on Control and Optimization.**
Austrian Academy of Sciences, Linz, Austria
Closing date: 29 June 2022.

## Offers for visiting researchers

**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..

**CIMPA-ICTP Research in Pairs for mathematicians in developing countries.**
CIMPA in Côte d'Azur or ICTP in Trieste, Italy) .
For periods of at least 6 weeks.
Closing date: 31 December for visits to be held in the following year.

**Simons Visiting Professors at Mathematisches Forschunginstitut 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 Researh 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 for research projects and conferences

**Thematic programs at MSRI.**
Mathematical Sciences Research Institute, Berkeley, United States.
Deadline: 1 de October, 1 December, and 1 March. Three years ahead.

**Hot topics Workshop at MSRI.**

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

**Summer graduate schools at MSRI.**
Mathematical Sciences Research Institute, Berkeley, United States.

**Workshop at CIRM.**
Centre International de Rencontres Mathématiques, France.

**CIMPA Online courses program.**
Geographic areas of activities of CIMPA (Africa, Central or South America, Asia).

**Support for workshop organization at Banff.**
Banff International Research Station.

**Proposal of a workshop in the Mathematisches Forschunginstitut Oberwolfach.**
Oberwolfach, Germany.

**Hosting a workshop at AIMS South Africa.**
Contributions for workshops about AIMS's research focus areas.

**International Mathematical Union - Conference support program.**
For conferences in developing or economically disadvantaged countries.

# Preprints

## Network's members

Pau Mir, Eva Miranda and Jonathan Weitsman: *Bohr-Sommerfeld quantization of b-symplectic toric manifolds.*

2203.03340

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

Alberto Enciso, Daniel Peralta-Salas and Francisco Torres de Lizaur: *Limiting measures and energy growth for sequences of solutions to Taubes's Seiberg-Witten equations.*
2203.09814
[math.AP, math.DG, math.DS]

## Network's collaborators

Katarzyna Grabowska, Janusz Grabowski, Marek Kus and Giuseppe Marmo: *Lifting statistical manifolds.*
2203.02938
[math.DG, math-ph, math.MP]

Camille Laurent and Matthieu Léautaud: *On uniform controllability of 1D transport equations in the vanishing viscosity limit.*
2203.03266
[math.AP, math.OC]

Daniela Emmanuele, Marcos Salvai and Francisco Vittone: *Möbius fluid dynamics on the unitary groups.*
2203.03721
[math.DG]

Matías I. Caruso, Javier Fernández, Cora Tori and Marcela Zuccalli: *Discrete Mechanical Systems in a Dirac Setting: a Proposal.*
2203.05600
[math.DG, math.DS]

Anton Izosimov and Boris Khesin: *Long-diagonal pentagram maps.*
2203.07578

[nlin.SI, math.MG, math.SG]

Qi Luo, Ryan Weightman, Sean T. McQuade, Mateo Diaz, Emmanuel Trélat, William Barbour, Dan Work, Samitha Samaranayake and Benedetto Piccoli: *Optimization of vaccination for COVID-19 in the midst of a pandemic.*
2203.09502
[q-bio.PE, math.OC]

Ron Ofir, Francesco Bullo and Michael Margaliot: *Minimum effort decentralized control design for contracting network systems.*
2203.10392
[math.OC]

Arjan van der Schaft and Volker Mehrmann: *A Lagrange subspace approach to dissipation inequalities.*
2203.13527
[math.OC]

Tristan Bozec, Damien Calaque and Sarah Scherotzke: *Calabi-Yau structures on (quasi-) bisymplectic algebras.*
2203.14382
[math.RT, math.AG, math.AT, math.SG]

# Links of interest

Geometry, Mechanics and Control Network

Journal of Geometric Mechanics - March 2022, Volume 14, Issue 1

International Mathematical Union (IMU) Newsletter - January 2022

International Mathematical Union (IMU) Special issue on the International Day of Mathematics 2022 - March 2022

International Association of Mathematical Physics Bulletin - January 2022

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 Poincarè 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
gmcactivities@gmail.com