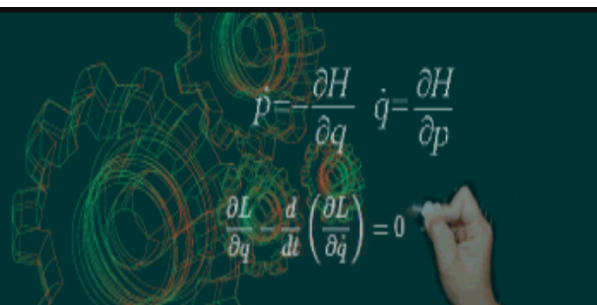




GMC Network



Geometry, Mechanics and Control Network Infosheet

April 2022

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Network's activities

14th International Summer School on Geometry, Mechanics and Control.

4–8 July 2022, Burgos, Spain.

Outstanding event

XXX International Fall Workshop on Geometry and Physics.

29 August–2 September 2022, Madrid, 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.

Conferences

Strings and Geometry.

2 – 5 May 2022, Utrecht, Netherlands.

Large-Scale Certified Numerical Methods in Quantum Mechanics.

2 – 6 May 2022, Los Angeles, USA.

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 Angeles, 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.

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.

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.

Summer School on Geometry and Topology.

7 July–6 August 2022, Hradec Králové, Czech Republic.

15th Viennese Conference on Optimal Control and Dynamic Games.

12–15 July 2022, Wien, Austria.

Conference on Differential Geometry and its Applications.

17–23 July 2022, Hradec Králové, Czech Republic.

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.

Symplectic and Contact Topology.

8–12 August 2022, Davis, USA.

Calculus of Variations.

14–20 August 2022, Oberwolfach, Germany.

Quantum Dynamics: From Electrons to Qbits.

22 August–9 September 2022, Trieste, Italy.

25th International Summer School on Global Analysis and Applications.

22–26 August 2022, Ostrava, Czech Republic.

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.

Geometric Structures and Moduli Spaces.

29 August–2 September 2022, Córdoba, Argentina.

Nonlocal Problems in Mathematical Physics, Analysis and Geometry.

4–9 September 2022, Hangzhou, China.

Summer School on Phase-field Methods in Mechanics.

4–10 September 2022, Quiberon peninsula, France.

QMATH 15-Mathematical Results in Quantum Physics.

12–16 September 2022, California, USA.

Noncommutative Geometry and Noncommutative Invariant Theory.

25–30 September 2022, Banff, Canada.

Workshop on Complex Geometry and Geometric Group Theory.

26–30 September 2022, Karlsruhe, Germany.

New Four-Dimensional Gauge Theories.

24–28 October 2022, Berkeley, USA.

Job offers, fellowships and supports

Ph.D. offers

PhD position in mathematical health and disease modeling.

Roskilde Universitet, Roskilde, Denmark
Closing date: 7 May 2022.

PhD position in Mathematical Sciences.

University of Padova, Padova, Italy
Closing date: 12 May 2022.

PhD in Mathematical analysis and numerical analysis for models in machine learning.

Technical University of Munich, Munich, Germany
Closing date: 14 May 2022.

PhD in Analysis of singular and random systems.

University of Bielefeld, Bielefeld, Germany
Closing date: 15 May 2022.

PhD Position in Mathematics.

University of Innsbruck, Innsbruck, Austria
Closing date: 16 May 2022.

PhD in Pure Mathematics.

University of Antwerp, Antwerp, Belgium
Closing date: 16 May 2022.

Postdoctoral fellowships

Postdoctoral Research Associate in Applied Algebra and Topology.

University of Oxford, Oxford, England
Closing date: 4 May 2022.

Research Position (Postdoc).

University of Bielefeld, Bielefeld, Germany
Closing date: 4 May 2022.

Postdoctoral position in Mathematics.

Institute of Science and Technology Austria, Klosterneuburg, Austria
Closing date: 4 May 2022.

Postdoctoral Research Associate in Industrial Mathematics.

University of Oxford, Oxford, England
Closing date: 10 May 2022.

PostDoc in Mathematical analysis and numerical analysis for models in machine learning.

Technical University of Munich, Munich, Germany

PhD in Modelling Instabilities in Astrophysical Fluid Dynamics.

University of Exeter, Exeter, UK
Closing date: 18 May 2022.

2 PhD positions in Foundations of Stochastic Partial Differential Equations.

TU Delft, Delft, Netherlands
Closing date: 23 June 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.

Closing date: 14 May 2022.

Post-Doc Position in Numerical Analysis.

RICAM, Linz, Austria
Closing date: 31 May 2022.

Postdoc fellow positions for Biomedical Math.

IBS Biomedical Mathematics Group, Daejeon, South Korea
Closing date: 29 June 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

Offers for researchers

Research Assistant.
Georg-August University of Goettingen, Goettingen, Germany
Closing date: 8 May 2022.

Departmental Lecturer in Mathematical and Computational Finance.
University of Oxford, Oxford, England
Closing date: 9 May 2022.

Associate Director Positions of “Center for Geometry and Physics”.
Center for Geometry and Physics, Daejeon, South Korea
Closing date: 12 May 2022.

Professor in Probability.
King’s College London, London, UK
Closing date: 15 May 2022.

Professor in Applied Mathematics.

Offers for visiting researchers

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: 1 July.

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.

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.

University of Leicester, Leicester, UK
Closing date: 30 May 2022.

Professor in Mathematics.
Aarhus University, Aarhus, Denmark
Closing date: 31 May 2022.

Professor in Representation Theory.
Technical University of Munich, Munich, Germany
Closing date: 6 June 2022.

Senior researcher positions for Biomedical Math.
IBS Biomedical Mathematics Group, Daejeon, South Korea
Closing date: 29 June 2022.

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

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.

Financial support for research projects and conferences

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

Hot topics Workshop at MSRI.
Mathematical Sciences Research Institute, Berkeley,
United States.
Deadline: 1 October, 1 December, and 1 March.

Summer graduate schools at MSRI.
Mathematical Sciences Research Institute, Berkeley,
United States.
Deadline: 1 October, 1 December, and 1 March.

CIMPA School 2024.
For organizing research schools in mathematics in
developing countries.
Deadline: 9 October.

Workshop at CIRM.
Centre International de Rencontres Mathématiques,
France.
Deadline: Open at any time.

Interesting publication

"Symmetry in Geometric Mechanics and Mathematical Physics". A special issue of Symmetry.
Section "Physics and Symmetry/Asymmetry".

Preprints

Network's members

L. Blanco, F. Jiménez, J. de Lucas and C. Sardón:
*Geometric numerical methods for Lie systems and
their application in optimal control.*
2204.00046
[math.OC, math.DG, nlin.SI]

J. F. Cariñena, J. de Lucas and C. Sardón: *Quan-*

**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.

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 dis-
advantaged countries.
Deadline: Several calls.

MDPI Open Access Journals.
Editors: Manuel de León and Narciso Román-Roy.
Deadline for submissions: 15 February 2023.

tum quasi-Lie systems: properties and applications.
2204.00954
[math-ph, math.MP, nlin.SI, quant-ph]

Ahmed Allibhoy and Jorge Cortés: *Control Barrier
Function Based Design of Gradient Flows for Con-
strained Nonlinear Programming.*

2204.01930

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

Alberto Enciso, Daniel Peralta-Salas and Álvaro Romaniega: *Non-integrability and chaos for natural Hamiltonian systems with a random potential.*

2204.05964

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

Efstratios Stratoglou, Leonardo Colombo and Tomoki Ohsawa: *Optimal Control with Broken Symmetry of Multi-Agent Systems on Lie Groups.*

2204.06050

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

J. Fernando Barbero G., Bogar Díaz, Juan Margalef-Bentabol and Eduardo J. S. Villaseñor: *Edge observables of the Maxwell-Chern-Simons theory.*

2204.06073 (version 2)

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

Juan Margalef-Bentabol and Eduardo J. S. Villaseñor: *Proof of the equivalence of the symplectic*

forms derived from the canonical and the covariant phase space formalisms.

2204.06383

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

Xavier Rivas Guijarro: *Geometrical aspects of contact mechanical systems and field theories.*

2204.11537

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

Francisco Martín Cabrera: *Remarks on some integral formulas for G_2 -structures.*

2204.12838

[math.DG]

D. Iglesias Ponte, J. C. Marrero and E. Padrón: *Jacobi-Maupertuis principle, mechanical Hamiltonian systems with respect to linear Poisson structures and Jacobi-Reeb dynamics.*

2204.13523

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

Network's collaborators

Raquel Caseiro and Camille Laurent-Gengoux: *Modular class of Lie ∞ -algebroids and adjoint representation.*

2203.16139

[math.DG]

Marco Freibert and Andrew Swann: *Compatibility of balanced and SKT metrics on two-step solvable Lie groups.*

2203.16638

[math.DG]

Alexander Davydov, Saber Jafarpour, Matthew Abate, Francesco Bullo and Samuel Coogan: *Comparative Analysis of Interval Reachability for Robust Implicit and Feedforward Neural Networks.*

2204.00187

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

Marcin Zając: *The Tulczyjew triple for gauge field theories.*

2204.00561

[math-ph, math.MP]

Hiroaki Yoshimura and François Gay-Balmaz: *Hamiltonian variational formulation for nonequilibrium thermodynamics of simple closed systems.*

2204.00730

[math-ph, math.MP]

Alexander Davydov, Saber Jafarpour, Anton V. Proskurnikov and Francesco Bullo: *Non-Euclidean*

Monotone Operator Theory with Applications to Recurrent Neural Networks.

2204.01877

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

Martha Alvarez-Ramírez, Armengol Gasull and Jaume Llibre: *On the equilateral pentagonal central configurations.*

2204.03808

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

Veronica Centorrino, Francesco Bullo and Giovanni Russo: *Contraction Analysis of Hopfield Neural Networks with Hebbian Learning.*

2204.05382

[math.OC]

Alejandro Cabrera and Miquel Cueca: *Dimensional reduction of Courant sigma models and Lie theory of Poisson groupoids.*

2204.07193

[math-ph, math.MP]

H. W. Braden, Sergey A. Cherkis and Jason M. Quinones: *Construction of Exact Solutions to Nahm's Equations for the Multimonopole.*

2204.07822

[math-ph, math.MP]

Rui Loja Fernandes and Ioan Marcuț: *Multiplicative Ehresmann connections.*

2204.08507 (version 2)

[math.DG]

Sangli Teng, William Clark, Anthony Bloch, Ram Vasudevan and Maani Ghaffari: *Lie Algebraic Cost Function Design for Control on Lie Groups*.
2204.09177
[math.OC, cs.RO, cs.SY, eess.SY]

Giuliano Angelone, Paolo Facchi and Giuseppe Marmo: *Hearing the shape of a quantum boundary condition*.
2204.10248
[quant-ph, math-ph, math.MP]

Rutwig Campoamor-Stursberg and Ian Marquette: *Decomposition of enveloping algebras of simple Lie*

algebras and their related polynomial algebras.
2204.11395
[math-ph, math.MP]

David Martínez Torres and Marcelo Silva: *Non-exactness of toric Poisson structures*.
2204.11916
[math.DG]

Aymen Daghar and Jose S. Canovas: *Topological sequence entropy and topological dynamics of tree maps*.
2204.13000
[math.DS]

Links of interest

Geometry, Mechanics and Control Network

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

International Mathematical Union (IMU) Newsletter - 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 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 gmcactivities@gmail.com