



**Geometry, Mechanics and  
Control Network  
Infosheet**

**April 2011**

**Editors: María Barbero  
and Silvia Vilarino**

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# GMC Network Infosheet

April 2011

## Network's activities

### **Minicourse: Numerical Aspects and Applications of Discrete Geometric Control.**

Marin Kobilarov (California Institute of Technology, USA)

Friday, April 29 at 11:00 (3 hours)

Sala Naranja ICMAT

Instituto de Ciencias Matemáticas CSIC-UAM-UC3M-UCM

C/ Nicolás Cabrera, 13-15

Campus de Cantoblanco, 28049 Madrid.

### **V International Summer School on Geometry, Mechanics and Control**

La Cristalera, Madrid, Spain

July 4-8, 2011

<http://www.gmcnetwork.org/ssgmc11>

**Important dates:**

- **Registration: May 15, 2011**
- **Accommodation: May 15, 2011**
- **Scholarships: April 15, 2011**

### **XX International Fall Workshop on Geometry and Physics**

ICMAT, Madrid, Spain.

August 31-September 3, 2011.

<http://www.icmat.es/congresos/xxifwgp>

**Deadline submission for contributed talks and posters: May 20, 2011**

### **VI International Young Researchers Workshop on Geometry, Mechanics and Control**

Coimbra, Portugal

December 2011.

## Job offers, fellowships and awards

### PhD offers

#### **Graduate Teaching Assistanships**

School of Mathematics and Statistics.

University of Sheffield, UK.

**Closing date: Apr. 29, Jul. 29, 2011.**

<http://www.jobs.ac.uk/job/ACB687/graduate-teaching-assistanships-gtas/>

#### **Research Assistant in Pure Mathematics**

Pure Mathematics Section

Department of Mathematics

Imperial College London

**Closing date: May 5, 2011**

<http://www.jobs.ac.uk/job/ACM351/>

#### **PhD offer in the CRM's complex systems group**

Centre de Recerca Matemàtica, Barcelona, Spain.

**Closing date: May 15, 2011.**

[http://www.crm.cat/calls/ProspectiveCallforPhDStudentsandPost\\_Complex.pdf](http://www.crm.cat/calls/ProspectiveCallforPhDStudentsandPost_Complex.pdf)

### PhD scholarships.

Universidad Autónoma de Madrid, Spain.

Closing date: May 24, 2011.

<http://verso.mat.uam.es/web/>

### Postdoctoral fellowships

#### Statistics Faculty Positions

Center of Mathematical Sciences and Department of Mathematical Sciences in Tsinghua University

All areas pure math, appl math, sta.

Closing date: April 30, 2011.

<http://www.math-jobs.com/j.php?i=277>

#### Postdoctoral positions in the CRM's complex systems group

Centre de Recerca Matemàtica, Barcelona, Spain.

Closing date: May 15, 2011.

<http://www.crm.cat/calls/ProspectiveCallforPhDStudentandPost-Complex.pdf>

#### Grants for short postdoctoral research visits at IMUS

The goal of these grants is the establishment or development of research collaborations between young doctors from outside the University of Seville and University researchers in the field of Mathematics or its applications to other disciplines. In this edition, grants are offered for post-doctoral stays in the IMUS for a total duration of 5 months. The stays will take place between January 1<sup>st</sup>, 2011 and July 31<sup>st</sup>, 2012.

Closing date: July 31, 2011.

<http://www.imus.us.es/pdf/estancias-IMUS-2011-en.pdf>

#### Marie-Curie Actions Calls: FP7-PEOPLE-2011-IEF, FP7-PEOPLE-2011-IOF, FP7-PEOPLE-2011-IIF

Closing date: August 11, 2011.

<http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.FP7CallsPage#Marie-Curie%20Actions>

#### 6 postdoctoral fellowships by SADCO network (Sensitivity Analysis for Deterministic Controller Design).

Different locations in Europe: Paris, Louvain, Bayreuth, Padova, Rome, Porto, London.

Research topics: Control theory, stabilization and optimization of nonlinear systems, Hamilton-Jacobi theory, differential games, perturbed systems, numerical analysis.

Latest deadline: October 31, 2011.

<http://itn-sadco.inria.fr/available-positions>

### Offers for visiting and senior researchers

#### Lecturer in Applied Mathematics

Department of Mathematical Sciences  
Durham University

Closing date: April 26, 2011

<http://www.jobs.ac.uk/job/ACJ198/>

#### Research Associate in Pure Mathematics

Pure Mathematics Section  
Department of Mathematics  
Imperial College London

Closing date: May 2, 2011

<http://www.jobs.ac.uk/job/ACL508/>

#### Lecturers in Mathematics (two posts)

Departement of Mathematics  
Faculty of Engineering & Physical Sciences  
University of Surrey

Closing date: May 5, 2011

<http://www.jobs.ac.uk/job/ACL991/>

#### Senior Lecturer in Mathematics

Departement of Mathematics  
Faculty of Engineering & Physical Sciences  
University of Surrey

Closing date: May 5, 2011

<http://www.jobs.ac.uk/job/ACL992/>

#### Lecturer/Senior Lecturer (Two Positions)

Department of Mathematics  
Faculty of Computing and Mathematics Sciences  
University of Waikato

Closing date: June 10, 2011

<http://www.math-jobs.com/j.php?i=1329>

#### Full professor of Applied Mathematics and Modelling

University of Vienna.

Closing date: June 10, 2011.

The University of Vienna intends to increase the number of women on its faculty, particularly in high-level positions, and therefore specifically invites applications by women. Among equally qualified applicants women will receive preferential consideration.

Successful candidates will have the following qualifications:

- \* PhD and post-doctoral experience at a university or other research institution (Austrian or equivalent international academic degree in the relevant field)
- \* Outstanding research and publication record, with an excellent reputation as an active member in the international academic community -(Habilitation (venia docendi) or equivalent international qualification in the relevant field is desirable)
- \* Experience in designing, procuring and directing major research projects, and willingness and ability to assume the responsibility of team leadership
- \* Experience in university teaching, and willingness and ability to teach at all curricular levels, to supervise theses, and to further the work of junior academic colleagues

The University of Vienna expects the successful candidate to acquire, within three years, proficiency in German sufficient for teaching in Bachelor programmes and participation in committees.

Applications in English should be submitted by email (preferably as PDF attachments) to the Dean's office of

the Faculty of Mathematics of the University of Vienna, Nordbergstrasse 15, A-1090 Vienna, [dekanat.mathematik@univie.ac.at](mailto:dekanat.mathematik@univie.ac.at), no later than June 10th, 2011 with reference DK 506-07/2011.

### **Aid to invite speakers Fulbright**

Aid to Spanish institutions to invite American Fulbright lecturers for a maximum period of two weeks

**Deadline for applications: June 29, 2011**

<http://www.fulbright.es/programas/ayudas-institucionales/ayudas-para-invitar-a-conferenciantes-fulbright/2010-2011>

### **Lecturer, Associate Professor, Professor.**

School of Science, Department of Mathematics and Applied mathematics, Tianjin University, China.

**Closing date: Aug. 29, 2011.**

[http://sciences.academickeys.com/seeker\\_job\\_display.php?dothis=display&job\[IDX\]=28518-SC110120m-8e&oid=0](http://sciences.academickeys.com/seeker_job_display.php?dothis=display&job[IDX]=28518-SC110120m-8e&oid=0)

### **2 Full-time Tenure-track Positions in Applied Mathematics**

University of Maryland Eastern Shore Princess Anne, MD, USA. Position Start Date: August 2011

**Closing date: Open until filled.**

[http://sciences.academickeys.com/seeker\\_job\\_display.php?dothis=display&job\[IDX\]=28101-SC110131w-8e&oid=790411](http://sciences.academickeys.com/seeker_job_display.php?dothis=display&job[IDX]=28101-SC110131w-8e&oid=790411)

### **Visiting Research at IMI. Call 2011**

Instituto de Matemática Interdisciplinar  
Universidad Complutense de Madrid

This call aims to enhance cooperation between IMI researchers and high level researchers and promising young students carrying out their activity in other scientific institutions, in Spain or abroad. During their stays, visitors will collaborate with host IMI Program activities. The following modalities will be considered:

- a) Senior Visiting Researchers
- b) Postdoctoral stays
- c) Predoc Internships
- d) Exploratory meetings

The call will be open permanently. Evaluation and awarding is expected to be made on a monthly basis. More information:

[http://www.mat.ucm.es/IMI/ProgramaVisitantesIMI2011/Call\\_IMIVisitingResearchers\\_2011.pdf](http://www.mat.ucm.es/IMI/ProgramaVisitantesIMI2011/Call_IMIVisitingResearchers_2011.pdf)

### **Awards**

#### **Scientific "Joan Lluís Vives" Award.**

For PhD students about to defend the thesis.  
<http://www.vives.org/pcc/>

### **Financial support for research projects and conferences**

#### **Marie Curie Career Integration Grants (GIG)**

**Deadlines:**

- ✓ September 6, 2011 at 17:00 (Brussels local time)

More information:

[http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=us.ersite.FP7DetailsCallPage&call\\_id=379](http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=us.ersite.FP7DetailsCallPage&call_id=379)

### **Financial support for organization of conferences by Spanish Ministry of Science and Innovation.**

**Closing date: from April 15, 2011 to June 30, 2011; from July 1, 2011 to October 25, 2011.**

[http://www.boe.es/diario\\_boe/txt.php?id=BOE-A-2010-19639](http://www.boe.es/diario_boe/txt.php?id=BOE-A-2010-19639)

### **2013 ICPAM-CIMPA research schools call for projects**

**Deadlines:**

- ✓ For pre-proposal: June 15, 2011.
- ✓ Complete proposal: October 1, 2011.

More information:

<http://www.cimpa-icpam.org/spip.php?article124>

### **Complementary actions for non-guided fundamental research projects.**

National Program for Fundamental Research Project

**Deadline for submission depending on the offer: for the first five types from April 15, 2011 to June 30, 2011; July 7, 2011 to October 25, 2011; for the modality F only the first two periods and for type G only the first of those periods**

More information:

<http://www.micinn.es/portal/site/MICINN/menuitem.dbc68b34d11ccbd5d52ffeb801432ea0/?vgnnextoid=f02093ee6b80d210VgnVCM1000001d04140aRCRD&vgnnextchannel=3acb282978ea0210VgnVCM1000001034e20aRCRD>

## **Interesting news and publications**

### **The IRSES Network "GEOMECH"**

GEOMECH is an IRSES network sponsored within the 7th EU Framework Program and is coordinated by Ghent University. It includes partners from Argentina, Belgium, Czech Republic, Japan, Spain and the USA and it aims to facilitate research exchange visits between these partners. More information on the network can be found on the website [www.geomechnetwork.ugent.be](http://www.geomechnetwork.ugent.be). The website will also serve as the forum where the network's activities and outcomes will be disseminated.

### **Matemáticas y sus Fronteras**

<http://weblogs.madrimasd.org/matematicas/>

Those interested in publishing something, contact with Manuel de León [mdeleon.dos@gmail.com](mailto:mdeleon.dos@gmail.com)

### **Journal of Geometric Mechanics (JGM)**

Vol. 2, n. 4, December 2010.

[http://aimsciences.org/journals/displayPapers1.jsp?pu\\_bID=412](http://aimsciences.org/journals/displayPapers1.jsp?pu_bID=412)

### **Free access to Ph.D. dissertations all around the world.**

<http://www.ndltd.org/find>

## Professional network for scientists.

<http://www.researchgate.net/>

### Network's members preprints

J.F. Cariñena, J. de Lucas: Lie systems: theory, generalisations, and applications.

[arXiv:1103.4166v1](http://arxiv.org/abs/1103.4166v1) [math-ph]

A. Ballesteros, A. Enciso, F. J. Herranz, O. Ragnisto, D. Riglioni: Superintegrable oscillator and Kepler systems on spaces of nonconstant curvature via the Stackel transform.

[arXiv:1103.4554v1](http://arxiv.org/abs/1103.4554v1) [math-ph]

A. Ibort, J.M. Pérez-Pardo: Solutions of the spectral problem for arbitrary self-adjoint extensions of the 1D Schroedinger equation.

[arXiv:1103.5588v1](http://arxiv.org/abs/1103.5588v1) [math-ph]

J. C. Marrero, D. Martín de Diego, A. Stern: Symplectic groupoids and discrete constrained Lagrangian mechanics.

[arXiv:1103.6250v1](http://arxiv.org/abs/1103.6250v1) [math.SG]

P. Balseiro, L. García-Naranjo: Gauge Transformations, Twisted Poisson Brackets and Hamiltonization of Nonholonomic Systems

[arXiv:1104.0880v1](http://arxiv.org/abs/1104.0880v1) [math-ph]

M. Barbero Liñán, A. D. Lewis: Geometric interpretations of the symmetric product in affine differential geometry.

[arXiv:1104.1208v1](http://arxiv.org/abs/1104.1208v1) [math.DG]

L. Colombo, D. Martín de Diego: On the geometry of higher-order variational problems on Lie groups.

[arXiv:1104.3221v1](http://arxiv.org/abs/1104.3221v1) [math-ph]

K. Ebrahimi-Fard, F. Patras: Exponential Renormalization II: Bogoliubov's R-operation and momentum subtraction schemes.

[arXiv:1104.3415v1](http://arxiv.org/abs/1104.3415v1) [math-ph]

M. Castrillón López: Field theories: reduction, constraints and variational integrators.

<http://www.springerlink.com/content/h833922386859t1w/>

M. Barbero Liñán, M. C. Muñoz Lecanda: Presymplectic high order maximum principle.

<http://www.springerlink.com/content/7277525133665082/>

F. Jiménez, D. Martín de Diego: Continuous and discrete approaches to vakonomic mechanics.

<http://www.springerlink.com/content/7891766p2589257n/>

C. M. Campos: Higher-order field theory with constraints.

<http://www.springerlink.com/content/g8361g8t740t38x4/>

### Network's collaborators preprints

R. Caseiro, R. Loja Fernandes : The modular class of a Poisson map.

[arXiv:1103.4305v1](http://arxiv.org/abs/1103.4305v1) [math.DG]

M. Celli, E. A. Lacomba, E. Pérez-Chavela: On polygonal relative equilibria in the N-vortex problem

[arXiv:0811.1785v2](http://arxiv.org/abs/0811.1785v2) [math-ph]

R. L. Fernandes, I. Struchiner: The Classifying Lie Algebroid of a Geometric Structure I: Classes of Cofrades.

[arXiv:1103.5850v1](http://arxiv.org/abs/1103.5850v1) [math.DG]

J. Grabowski, D. Khudaverdyan, N. Poncin: Loday algebroids and their supergeometric interpretation

[arXiv:1103.5852v1](http://arxiv.org/abs/1103.5852v1) [math.DG]

M. Tao, H. Owhadi, J. E. Marsden: Space-time FLAVORS: finite difference, multisymplectic, and pseudospectral integrators for multiscale PDEs

[arXiv:1104.0272v1](http://arxiv.org/abs/1104.0272v1) [math.NA]

### Other conferences

#### **2011 EECI Graduate School on Control**

January-May, 2011, Paris, France.

<http://www.eeci-institute.eu/GSC2011>.

#### **GEDYTO: Geometrical Methods in Dynamics and Topology.**

April 18-22, 2011. Hanoi, Vietnam.

<http://www-ma1.upc.es/~miranda/hanoi/conference/>

#### **JDG 2011: Conference on Geometry and Topology.**

April 29-May 1, 2011. Harvard University, USA.

<http://math.harvard.edu/jdg/index.html>

#### **Workshop on Multiple Zeta Values, Modular Forms and Elliptic Motives.**

May 3-6, 2011. University of Bristol, UK.

[http://www.maths.bris.ac.uk/events/meetings/meeting/index.php?meeting\\_id=67](http://www.maths.bris.ac.uk/events/meetings/meeting/index.php?meeting_id=67)

#### **Workshop Discrete, Tropical and Algebraic Geometry.**

May 5-7, 2011. Goethe-Universität Frankfurt am Main, Germany.

<http://www.math.uni-frankfurt.de/geometry2011/>

#### **Riemannian Geometry and Applications "RIGA" 2011.**

May 10-14, 2011. Bucharest, Romania.

<http://fmi.unibuc.ro/ro/pdf/2011/manifestari/PosterRIGA-2011.pdf>

#### **Connections in Geometry and Physics GAP 2011.**

May 13-15, 2011. Fields Institute, Toronto, ON, Canada.

<http://www.math.uwaterloo.ca/~gap/>

**SIAM Conference on Optimization.**

May 16-19, 2011. Darmstadt, Germany.

<http://www.siam.org/meetings/op11/>

**Workshop on Lie groups, Lie algebras and their representation.**

May 21-22, 2011. Riverside, California, USA.

<http://math.ucr.edu/~lietheory/workshop2011.shtml>

**SIAM Conference on Applications of Dynamical Systems.**

May 22-26, 2011. Snowbird, Utah, USA.

<http://www.siam.org/meetings/ds11/>

**Progress on Difference Equations.**

May 22-27, 2011. Dublin, Ireland.

<http://www.dcu.ie/mathspode2011/index.shtml>

**Partial differential equations in Mathematical Physics.**

May 26-27, Moscow, Russia.

[http://158.250.33.149/petr/php/home\\_page\\_eng.php](http://158.250.33.149/petr/php/home_page_eng.php)

**XI Congreso Dr. Antonio Monteiro.**

May 26-28. Universidad Nacional del Sur/CONICET.

Bahia Blanca, Argentina.

<http://www.matematica.uns.edu.ar/XICongresoMonteiro/spanish.php>

**Summer School and Conference on Contact and Symplectic Geometry.**

May 30- June 17, 2011. Nantes University, France.

<http://yann.rollin.free.fr/tcst.php?page=home>

**Jornadas sobre los Problemas del Milenio.**

June 1-3, 2011. University of Barcelona, Spain.

<http://garf.ub.es/milenio/>

**XIII Internacional Conference Geometry, Integrability and Quantization.**

June 3-8, 2011. Varna, Bulgaria.

<http://www.bio21.bas.bg/conference/>

**Folding and Unfolding: Interactions from Geometry: 65<sup>th</sup> birthday of Giuseppe Marmo.**

June 8-12, 2011. Ischia, Hotel Continental Terme, Italy.

**Poisson Geometry and Applications conference**

June 13-16, 2011. Figueira da Foz, Portugal.

<http://www.mat.uc.pt/~poissonga/>

**Future directions in difference equations.**

June 13-17, 2011. Vigo, Spain.

<http://sites.google.com/site/fdde2011/home>

**87<sup>th</sup> Encounter between Mathematicians and Theoretical Physicists: Lorentz geometry in Mathematics and in Physics.**

June 16-18, 2011. University of Strasbourg, France.

<http://www-irma.u-strasbg.fr/article1044.html>

**Conference on Geometry: Theory and Applications.**

June 20-24, 2011. Stift Vorau, Styria, Austria.

<http://www.ag.jku.at/vorau2011>

**9<sup>th</sup> edition of the International Workshop "Lie Theory and Its Applications in Physics"**

June 20-26, 2011. Resort "Chaika", near Varna, on the Black Sea, Bulgaria.

It is a meeting intended for both physicists and mathematicians.

Contact information: [dobrev@inrne.bas.bg](mailto:dobrev@inrne.bas.bg)

**Mathematische Arbeitstagung 2011 BONN (D. Zagier's 60th birthday)**

June 24-30, 2011, Max Planck Inst. for Mathematics, Germany.

<http://www.mpim-bonn.mpg.de/node/2866>

**XXX Workshop on Geometric Methods in Physics.**

June 26-July 2, 2011. Bialowieza, Poland.

<http://wgmp.uwb.edu.pl/index.html>

**Geometry of Manifolds and Mathematical Physics to celebrate the 80th birthday of Włodzimierz Tulczyjew**

June 27-July 1, 2011. Krakow,

<http://www.im.uj.edu.pl/dgmp2011>

**GESTA 2011: New Trends in Symplectic and Contact Geometry.**

June 27-July 1, 2011. CIEM, Castro Urdiales, Spain.

<http://www.upc.edu/gesta/lecturers.html>

**50<sup>th</sup> Séminaire de mathématiques supérieures: Metric Measures Spaces: Geometric and Analytic Aspects.**

June 27 – July 8, 2011. Université de Montréal, Canada.

[http://www.dms.umontreal.ca/~sms/Metric11/index\\_e.php](http://www.dms.umontreal.ca/~sms/Metric11/index_e.php)

**American Control Conference.**

June 29-July 1, 2011. San Francisco, California, USA.

<http://a2c2.org/conferences/acc2011/>

**Thematic Program on Discrete Geometry and Applications.**

July-December 2011. Fields Institute, Toronto, ON, Canada.

<http://www.fields.utoronto.ca/programs/scientific/11-12/discretegeom/index.html>

**ESF-EMS-ERCOM Mathematics Conference: Completely Integrable Systems and Applications.**

July 3-8, 2011. Erwin Schrödinger Institute, Vienna, Austria.

**Deadline for applications: April 20, 2011.**

<http://www.esf.org/index.php?id=7348>

**Gauge theory and complex geometry.**

July 4-23, 2011. University of Leeds, UK.

<http://www.maths.leeds.ac.uk/pure/geometry/qtcg/>

**The 2011 International Conference of Applied and Engineering Mathematics.**

July 6-8, 2011. Imperial College London, UK.

<http://www.euro-math-soc.eu/node/710>

**International Congress on Industrial and Applied Mathematics: Marsden Memorial minisymposium.**

July 18-22, 2011, Vancouver, BC, Canada.

<http://www.iciam2011.com/>

**Workshop on Rough Paths and Combinatorics in Control Theory.**

July 25-27, University of California, San Diego, USA.

<http://www.th.physik.uni-bonn.de/people/fard/RPCCT2011/>

**SIAM Conference on Control and Its Applications**

July 25-27, 2011. Hyatt Regency Baltimore, Baltimore, Maryland, USA.

<http://www.siam.org/meetings/ct11/>

**3rd International Conference on Control and Optimization with Industrial Applications – COIA 2011**

August 22-24, 2011. Bilkent University, Ankara, Turkey

<http://www.ee.bilkent.edu.tr/~coia2011>

**18th World Congress of the International Federation of Automatic Control (IFAC)**

August 28-September 2, 2011. Milano, Italy.

<http://www.ifac2011.org/>

**VI International Meeting on Lorentzian Geomtry.**

September 6-9, 2011. Granada, Spain.

<http://gigda.ugr.es/gelogra/>

**Satellite Meeting Unravelling and Controlling Discrete Dynamical Systems**

September 12-16, 2011. Vienna, Austria.

**Deadline for abstract submissions: May 10, 2011.**

<http://www.disdysys.ugent.be/>

**Conference on Geometric Structures in Mathematical Physics.**

September 19-26, 2011. Albena, Bulgaria.

<http://www.fmi.uni-sofia.bg/ivanovsp/MathPhys2011.html>

**Joint Mathematical Conference of the Austrian Mathematical Society at the Donau-Universität Krems, together with the Catalan, Czech, Slovak and Slovenian Mathematical Societies.**

September 25-28, 2011. Krems, Austria.

<http://www.dmg.tuwien.ac.at/OMG/OMG-Tagung/>

**International Conference Kolmogorov Readings: General control problems and their applications (GCP - 2011)**

October 10-14, 2011. Tambov, Russia.

<http://www.tambovopu2011.narod.ru/>

**Workshop on Algebra Geometry Mathematical Physics.**

October 24-26, 2011. Mulhouse, France.

**Registration deadline: September 30, 2011.**

<http://www.agmp.eu/mul11/>

**50<sup>th</sup> IEEE Conference on Decision and Control and European Control Conference.**

December 12-15, 2011. Orlando, Florida.

<http://control.disp.uniroma2.it/cdcecc2011>

**NOTE: if you want to include information in this infosheet, please send it to [gmcnet@ull.es](mailto:gmcnet@ull.es)**