

2. M. Barbero Liñán, M. Sigalotti, High order sufficient conditions for configuration tracking of affine connection control systems, *System Control Lett.*, Volume 59, Issue 8, August 2010, Pages 491-503.
3. M. Barbero Liñán, M.C. Muñoz Lecanda, Strict abnormal extremals in nonholonomic and kinematic control systems, Special issue “Nonholonomic constraints in Mechanics and Optimal Control Theory” in *Discrete Contin. Dyn. Syst. Ser. S* **3**(1), 2010.
4. M. Barbero Liñán, M.C. Muñoz Lecanda, Constraint Algorithm for Extremals in Optimal Control Problems, *Int. J. Geom. Methods Mod. Phys.*, Vol. **6**(7), 2009, 1221–1233.
5. M. Barbero Liñán, M.C. Muñoz Lecanda, Geometric approach to Pontryagin’s Maximum Principle, *Acta Appl. Math.*, Vol. **108**(2)(2009) 429–485.
6. M. Barbero Liñán, A. Echeverría Enríquez, D. Martín de Diego, M.C. Muñoz Lecanda, N. Román Roy, Unified formalism for non–autonomous mechanical systems, *J. Math. Phys.*, Vol. **49**(6) (2008).
7. M. Barbero Liñán, A. Echeverría Enríquez, D. Martín de Diego, M.C. Muñoz Lecanda, N. Román Roy, Skinner–Rusk Formalism for Optimal Control and Applications. *J. Phys. A: Math. Theor.* **40** (2007) 12071–12093.

In proceedings:

1. M. Barbero Liñán, M. Sigalotti. Tracking problems: high order algorithms. To appear in proceedings 8th IFAC Symposium on nonlinear control systems 2010.
2. M. Barbero Liñán, D. Martín de Diego, M.C. Muñoz Lecanda, Lie algebroids and optimal control: abnormality. *Geometry and Physics: XVII International Fall Workshop, F. Etayo, M. Fioravanti and R. Santamaría (eds.), AIP Conference Proceedings*, Volume **1130**, pp. 113–119, 2009.
3. M. Barbero Liñán, M.C. Muñoz Lecanda, Optimal control problems for affine connection control systems: characterization of extremals. *Geometry and Physics: XVI International Fall Workshop, R. L. Fernandes and R. Picken (eds.), AIP Conference Proceedings*, Volume **1023**, pp. 127–131, 2008.
4. M. Barbero Liñán, A. Echeverría Enríquez, D. Martín de Diego, M.C. Muñoz Lecanda, N. Román Roy, Skinner–Rusk Formalism for Optimal Control, *Proceedings of the XV International Workshop on Geometry and Physics*, Puerto de la Cruz, Tenerife, Canary Islands, Spain. September 11–16, 2006. *Publ. de la RSME*, Vol. **XX** (2007).

FELLOWSHIPS, SCHOLARSHIPS & AWARDS

- | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| Postdoctoral fellowship “Juan de la Cierva”, Ministerio de Ciencia y Tecnología, Spain. National competition. | Sept. 2009–Aug. 2011 |
| Postdoctoral fellowship “Beatriu de Pinós”, Agència de Gestió d’Ajuts Universitaris i de Recerca, Spain. Provincial competition. | Dec. 2010–Dec. 2013 |
| Travel scholarship for graduate students at Department of Mathematics and Statistics, Queen’s University, Kingston, ON, Canada. Spanish Ministry of Education and Science. | Jun–Aug 2008
Oct–Dec 2007
Jun–Aug 2006 |

- Travel award Ferran Sunyer i Balaguer, Societat Catalana de Matemàtiques, Institut d'Estudis Catalans, Spain. Provincial competition. 2008
- Graduate fellowship recipient, Programa Nacional de Formación del Profesorado Universitario (FPU), Spanish Ministry of Education and Science, Spain. National competition. Apr 2005–Dec 2008
- Graduate fellowship recipient, Generalitat of Catalonia (Agència de Gestió d'Ajuts Universitaris i de Recerca – AGAUR), Spain. Provincial competition. Jan. 2005–March 2005
- Undergraduate research scholarship recipient, Centro Europeo para el Paralelismo de Barcelona (CEPBA) IBM Research Institute (CIRI), Spain. Duties: Implement scheduling algorithms. May–July, 2004
- Undergraduate Erasmus scholarship recipient, University of Sheffield, England. Sept. 2003–Feb. 2004
- Undergraduate research scholarship recipient, Department of Applied Mathematics II, Technical University of Catalonia, Spain. Supervisor: Josep Maria Brunat. Duties: Do research and write a dissertation on Cayley graphs and TopSpin game. June 2002–May 2003

TALKS

- XIII Encuentro de invierno. Geometría, Mecánica y Teoría de Control**, Zaragoza, Spain. January 26–27, 2011
- Second Iberoamerican Meeting on Geometry, Mechanics and Control**, Bariloche, Argentina. Invited lecture. January 10–14, 2011
- Workshop on Geometric and topological methods in control and robotics**, La Cristalera, Madrid, Spain. October 4–6, 2010
- International Congress of Mathematicians**, Hyderabad, India. August 19–27, 2010
- 4th Biannual Meeting on Systems and Control Theory**, Kingston, ON, Canada. May 13–15, 2010
- Control theory seminar**, Department of Applied Mathematics, University of Waterloo, ON, Canada. March 23–27, 2010
- 2009 Canadian Mathematical Society (CMS) Winter Meeting**, Windsor, ON, Canada. Contributed paper. December 5–7, 2009
- III Summer School on Geometry, Mechanics and Control**, L'Ametlla de Mar, Spain. June 22–26, 2009
- Differential geometry, dynamical systems and applications seminar**, Department of Applied Mathematics IV, Technical University of Catalonia, Barcelona, Spain. June 3, 2009
May 15, 2008
October 18, 2007
- Corida seminar**, Institut de Mathématiques Élie Cartan de Nancy, Université Nancy 1, Vandoeuvre-lès-Nancy, France. February 5, 2009

International Young Researchers Workshop on Geometry, Mechanics and Control (Continuous and Discrete Geometric Mechanics) , Barcelona, Spain.	December 16–18, 2008
XVII International Workshop on Geometry and Physics , Cantabria, Spain. Poster.	September 3–6, 2008
Mathematical Theory of Networks and Systems , Virginia Tech, Blacksburg, Virginia, USA.	July 28–August 1, 2008
Control seminar , Department of Mathematics and Statistics, Queen’s University, Kingston, Ontario, Canada.	July 23, 2008 November 28, 2007
Second International Summer School on Geometry, Mechanics and Control , La Palma, Canary Islands, Spain.	June 9–14, 2008
7th AIMS International Conference on Dynamical Systems, Differential Equations and Applications , Arlington, Texas, USA.	May 18–21, 2008
Geometric mechanics seminar , Instituto de Ciencias Matemáticas (CSIC–UAM–UC3M–UCM), Madrid, Spain.	April 9, 2008
X Encuentro de invierno. Geometría, Mecánica y Teoría de Control , Zaragoza, Spain.	January 30–31, 2008
XVI International Workshop on Geometry and Physics , Lisbon, Portugal.	September 5–8, 2007
First International Summer School on Geometry, Mechanics and Control , Castro Urdiales, Cantabria, Spain. Poster.	June 25–29, 2007
IV Nolineal , Ciudad Real, Spain. Poster.	June 6–9, 2007
XV International Workshop on Geometry and Physics , Puerto de la Cruz, Canary Islands, Spain. Poster.	September 11–16, 2006
Control seminar , Department of Mathematics and Statistics, Queen’s University, Kingston, Ontario, Canada (11 hours).	July–August 2006
VIII Encuentro de invierno. Mecánica, Geometría y Teoría de Control , Zaragoza, Spain.	February 1–2, 2006
Applied Mathematics to Control, Systems and Signals Seminar , Departamento de Matemáticas, Universidad Carlos III de Madrid, Leganés, Spain.	December 16, 2005

TEACHING

APSC 171–J: Calculus I , Faculty of Arts and Science, Queen’s University, ON, Canada. Instructor: Responsible for all aspects of teaching and grading.	Winter 2010
Math 949: Topics in Global Analysis , Graduate course, Queen’s University, ON, Canada. Instructor.	Fall 2009

- Multivariable calculus**, Communication Engineering (ETSETB–UPC), Winter, Fall 2008
 Technical University of Catalonia, Spain.
 Laboratory: Responsible of lecturing and grading Maple projects.
- Calculus 2 (multivariable calculus)**, School of Mathematics, Technical Winter 2008
 University of Catalonia, Spain.
 Tutorial: Lectured on problems and partially responsible of grading.

TEACHING DEVELOPMENT

- Course SGS901 on Teaching and Learning in Higher Education**, Sept. 2010- Dec. 2010
 Centre for Teaching and Learning, Queen’s University, Kingston, ON,
 Canada.
- Certificate III: Teaching and Learning: Scholarship**, Centre for Dec. 2010
 Teaching and Learning, Queen’s University, Kingston, ON, Canada.
- Teaching development day**, Centre for Teaching and Learning, Queen’s Sept. 7, 2010
 University, Kingston, ON, Canada. Workshops: Building a learning com-
 munity in the classroom; How to teach to the transition year; When X is
 not enough: Providing feedback for right/wrong assignments.

SERVICES

- Co-editor-in-chief of the Geometry, Mechanics and Control Net-** Dec. 2009–Present
work info sheet.
- Organizer of promoting the research group on Differential Geome-** 2007–2008
try, Dynamical Systems and Applications at the Technical University
 of Catalonia in the work fair that takes place every year.
- Co-supervisor of high school mathematics research projects**, 2002-2003
 Barcelona, Spain. Topics: The mathematics in our election system, How
 to follow paths?.
- Member of scientific committees:** International Young Researchers Workshop on Geometry, Me-
 chanics and Control.
- Member of organizing committees:** XX International Fall Workshop on Geometry and
 Physics, Instituto de Ciencias Matemáticas, ICMAT, Madrid (Spain), August 31-September 3, 2011.
 (<http://www.icmat.es/congresos/xxifwgp>);
 Workshop on Geometric and topological methods in control and robotics, La Cristalera, Madrid (Spain),
 October 4-6, 2010. (<http://webpages.ull.es/users/gmcnet/GTMCR2010/Home.html>);
 3rd International Young Researchers Workshop on Geometry, Mechanics and Control,
 Technical University of Catalonia (UPC), Barcelona (Spain), December 16-18, 2008.
 (<http://www.gmcnetwork.org/ejigmc08>).