Jaime Santos Rodríguez

Curriculum Vitae

Personal

Birthdate	9 March 1987
Birthplace	Mexico city, Mexico
Citizenship	Mexican

Research interests

My research lies within the fields of Riemannian Geometry and Metric Geometry. Currently my focus has been on symmetries of metric measure spaces that admit a synthetic notion of lower Ricci curvature bound. More specifically I have studied the structure of the group of isometries of such spaces and how it affects its geometry and topology.

Education

October 2015–	**PhD in Mathematics (expected 2020)**, *Universidad Autónoma de Madrid*, *Adviser Dr. Luis Guijarro Santamaría*.
August 2011–July 2013	**Master in Mathematical Sciences**, *Universidad Nacional Autónoma de México*, *Average – 9.56/10 Adviser Dr. Oscar A. Palmas Velasco*.
August 2006–July 2011	**Bachelor in Mathematics**, *Universidad Nacional Autónoma de México*, *Average – 8.84/10 Adviser Dr. Oscar A. Palmas Velasco*.

Preprints and publications

(with Dr.Guijarro) On the isometry group of $RCD^*(K,N)-$spaces. Manuscripta Mathematica (2018)

https://doi.org/10.1007/s00229-018-1010-7

Invariant measures and lower Ricci curvature bounds (Potential Analysis) (2019)

https://doi.org/10.1007/s11118-019-09790-y

Wasserstein isometries of positively curved Riemannian manifolds. (In preparation).

Research internships

2016	Instituto de Matemáticas de la UNAM, México, under the direction of Dr. Pablo Suárez Serrato, from 4 to 31 of August.

Departamento de Matemáticas, Facultad de Ciencias, Universidad Autónoma de Madrid
Ciudad Universitaria de Cantoblanco, Madrid, 28049
☎ *+34 639472558* • ✉ *jaime.santos@icmat.es*
⌂ *jaime-santos.github.io/math*   *1/5*

Teaching

Professor's assistant at UNAM, México.

2011-1	**Superior Algebra I**.
2011-2	**Modern Geometry I**.
2012-1	**Superior Algebra I**.
2012-2	**Superior Algebra II**.
2013-1	**Analytic Geometry I**.
2013-2	**Analytic Geometry II**.
2014-1	**Linear Algebra I**.
2014-2	**Linear Algebra II**.
2015-1	**Complex variables I**.
2015-1	**Differential Geometry I**.

Practice sessions professor at UAM, Spain

2016 1st quadrimester	**Analysis I for Telecommunications Engineering degree**.
2017 1st quadrimester	**Analysis I for Physics degree**.
2018 1st quadrimester	**Analysis I for Physics degree**.

Scholarships & contracts

2012–2013	Conacyt scholarship for Master degree.
2015-2018	Conacyt scholarship for Ph.D. degree.
2018–	Predoctoral contract Severo-Ochoa.

Computing

Basic	PYTHON, HTML
Intermediate	LaTeX, OpenOffice, Linux, Microsoft Windows, MAC OS

Assistance to events

2019	Workshop Geometric Analysis, Centre International de Mathemátiques et d'Informatique, Toulouse, France.
2019	Masterclass: The structure of limit spaces. Institut Henri Poincaré, Paris, France.
2017	Oberwolfach Seminar: Lower Curvature Bounds and Topology, Matematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany
2016	Encuentro de investigadores de la Red Española de Análisis Geométrico, Instituto de Matemáticas IE-Math, Granada, Spain.
2016	Differential Geometry in the Large, Centro Didattico Morgagni, Florence, Italy.
2015	Workshop on Analysis and Geometry in Metric Spaces, ICMAT, Madrid, Spain.

Departamento de Matemáticas, Facultad de Ciencias, Universidad Autónoma de Madrid
Ciudad Universitaria de Cantoblanco, Madrid, 28049
☎ *+34 639472558* • ✉ *jaime.santos@icmat.es*
⌂ *jaime-santos.github.io/math*   2/5

2015 Research Term on Analysis and Geometry in Metric Spaces, ICMAT, Madrid, Spain.

2014 Técnicas Modernas en Geometría Riemanniana, Facultad de Ciencias, UNAM, Mexico.

2012 IV Latinamerican Conference on Lie Groups and Geometry, CIMAT, Guanajuato, Mexico.

2012 Taller de Vinculación Matemáticos Mexicanos Jóvenes en el Mundo, CIMAT, Guanajuato, Mexico

Schools and Courses

2017 Basque Center for Applied Mathematics, Graduate School: 'Introduction to Geometric Analysis: The Atiyah-Singer Index Theorem', Bilbao, Spain.

2016 Scoula Normale Superiore, SMI Summer Course: 'Existence and Regularity for the Plateau problem', Palazzone (SNS) of Cortona, Arezzo, Italy. Grade obtained: A.

2015 Research Term on Analysis and Geometry in Metric Spaces, ICMAT, Madrid, Spain.

Poster Sessions

2017 The isometry group of a $RCD^*(K, N)$ space exposed at the Congreso Bienal de la Real Sociedad Matemática Española, Zaragoza, Spain.

2016 Isometry groups of $RCD^*(K, N)$ spaces, exposed in the 3ra Reunión de Matemáticos Mexicanos en el Mundo, CIMAT, Guanajuato, Guanajuato, Mexico.

Talks

2019 "Geometry and optimal transport",XIII Workshop of Young Researchers in Mathematics, Madrid, Spain.

2019 "On Wasserstein isometries of closed Riemannian manifolds",On curvature and global shape , Münster, Germany.

2019 "Wasserstein isometries on the sphere", Second BYMAT conference, Madrid, Spain.

2019 "Metric measure spaces with lower Ricci curvature bounds and its isometries" Workshop on Optimal Transport, Vienna, Austria.

2019 "Isometrías en el espacio de Wasserstein de una esfera " Taller y encuentro de la red Española de Análisis Geométrico, Murcia, Spain.

2019 "Isometries of metric measure spaces with lower Ricci curvature bounds" Analysis Seminar at the Mathematics Institute-University of Warwick, Warwick, United Kingdom.

2018 "Curvatura sintética e isometrías." Cuarta Reunión de Matemáticos Mexicanos en el Mundo, Oaxaca, Mexico.

2018 "Curvature, measures and isometries." Bringing Young Mathematicians Together (BYMAT),ICMAT, Madrid, Spain.

2017 "Isometry groups of spaces with lower Ricci curvature bounds." Intense activity period "Metric Measure Spaces and Ricci Curvature" at the Max Planck Institute for Mathematics, Bonn, Germany.

Departamento de Matemáticas, Facultad de Ciencias, Universidad Autónoma de Madrid
Ciudad Universitaria de Cantoblanco, Madrid, 28049
☎ *+34 639472558* • ✉ *jaime.santos@icmat.es*
🖥 *jaime-santos.github.io/math*   3/5

2017 "Isometrías en espacios con curvatura de Ricci acotada inferiormente." Cuarto Congreso de jóvenes investigadores RSME, Valencia, Spain.

2017 "Isometries and Ricci curvature on metric measure spaces." On curvature and global shape ,Münster, Germany.

2017 "The isometry group of metric measure spaces with lower Ricci curvature bounds." IV Encuentro Conjunto RSME-SMM, Valladolid, Spain.

2016 "Isometrías en espacios métricos con medidas y curvatura de Ricci acotada inferiormente" Taller de Jóvenes investigadores de la Red Española de Análisis Geométrico, Instituto de Matemáticas IE-math, Granada, Spain.

2016 "Curvatura de espacios métricos." Seminario Junior, ICMAT, Madrid, Spain.

2016 "Curvatura de Ricci sintética." Técnicas Modernas en Geometría Riemanniana III, Facultad de Ciencias UNAM, Mexico city, Mexico.

2015 "Sobre la estructura de las variedades con curvatura de Ricci no negativa." Tercer encuentro de tesistas en Geometría, Facultad de Ciencias UNAM, Mexico city, Mexico.

2014 "Espacios de Alexandrov: geometría diferencial no diferenciable." Quinto Ciclo de Conferencias: Aquelarre Matemático. Facultad de Ciencias UNAM, Mexico city, Mexico.

2013 "Sobre la curvatura de una variedad riemanniana." Cuarto Ciclo de Conferencias: Aquelarre Matemático. Facultad de Ciencias UNAM, Mexico city, Mexico.

2012 "Geometría de Finsler." Tercer Ciclo de Conferencias: Aquelarre Matemático. Facultad de Ciencias UNAM, Mexico city, Mexico.

Outreach

2018 XVIII edición de la Semana de la Ciencia, taller de Matemagia, UAM, Madrid, Spain

2016 XVI edición de la Semana de la Ciencia, taller de Códigos Secretos, UAM, Madrid, Spain.

Languages

Spanish	**Native speaker**	
English	**Advanced**	*TOEFL IBT 110/120*

Academic References

Prof. Luis Guijarro
luis.guijarro@uam.es
Universidad Autónoma de
Madrid (UAM)
Spain

Prof. Fernando Galaz-García
fernando.galaz-garcia@durham.ac.uk
Durham University
United Kingdom

Prof. Andrea Mondino
Andrea.Mondino@maths.ox.ac.uk
University of Oxford
United Kingdom

Departamento de Matemáticas, Facultad de Ciencias, Universidad Autónoma de Madrid
Ciudad Universitaria de Cantoblanco, Madrid, 28049
☎ *+34 639472558* • ✉ *jaime.santos@icmat.es*
🖥 *jaime-santos.github.io/math*   *4/5*

Teaching Reference

Dr. Mario García Fernández
mario.garciaf@uam.es
Universidad Autónoma de
Madrid (UAM)
Spain

Departamento de Matemáticas, Facultad de Ciencias, Universidad Autónoma de Madrid
Ciudad Universitaria de Cantoblanco, Madrid, 28049
☎ *+34 639472558* • ✉ *jaime.santos@icmat.es*
📠 *jaime-santos.github.io/math*   5/5