# Roi Docampo Álvarez

Instituto de Ciencias Matemáticas ▪ Consejo Superior de Investigaciones Científicas ▪ Madrid ▪ Spain
roi.docampo@icmat.es ▪ +34 91 29 99 780 ▪ http://roidocampo.github.io

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|---|---|
| BIOGRAPHICAL | Born May 22, 1978, in Ourense (Spain). |
| EMPLOYMENT | Contratado Severo Ochoa (Post-doc), ICMAT, Madrid, Feb. 2015 − present |
| | Investigador Asociado (Visitor), Univ. de Santiago de Compostela, Dec. 2014 − Jan. 2015 |
| | Bolsista Ciência sem Fronteiras (Post-doc), Univ. Federal Fluminense, Feb. 2013 − Nov. 2014 |
| | Wylie Assistant Professor/Lecturer (Post-doc), University of Utah, July 2009 − June 2012 |
| | Research/Teaching Assistant (Student), Univ. of Illinois at Chicago, Aug. 2003 − July 2009 |
| EDUCATION | University of Illinois at Chicago, Ph. D. in Mathematics, 2009<br>Thesis: *Arcs on determinantal varieties*. Advisor: Lawrence Ein |
| | Universidade de Santiago de Compostela, Diploma de Estudios Avanzados, 2003 |
| | Universidade de Santiago de Compostela, Licenciatura en Matemáticas, 2001 |
| RESEARCH INTERESTS | Algebraic geometry, singularity theory, and valuation theory: birational geometry, multiplier ideals, arc spaces, jet schemes, Nash problem, motivic integration, Riemann-Zariski spaces, Berkovich spaces, determinantal varieties, spherical varieties. |

PUBLICATIONS

[1] Roi Docampo, *Arcs on determinantal varieties*, Trans. Amer. Math. Soc. **365** (2013), no. 5, 2241–2269. `arXiv:1011.1930`.

[2] Tommaso de Fernex and Roi Docampo, *Jacobian discrepancies and rational singularities*, J. Eur. Math. Soc. **16** (2014), no. 1, 165–199. `arXiv:1106.2172`.

IN PRESS

[3] Tommaso de Fernex, Roi Docampo, Shunsuke Takagi, and Kevin Tucker, *Comparing multiplier ideals to test ideals on numerically Q-Gorenstein varieties*, Bull. Lond. Math. Soc., to appear. `arXiv:1401.7946`.

PREPRINTS

[4] Tommaso de Fernex and Roi Docampo, *Terminal valuations and the Nash problem*. `arXiv:1404.0762`.

INVITED TALKS

*Terminal valuations and the Nash problem*, 02/05/2015, Congreso de la RSME 2015, Granada

*Valorizações terminais e o problema de Nash II*, 09/16/2014, Universidade Federal Fluminense

*Valorizações terminais e o problema de Nash*, 09/09/2014, Universidade Federal Fluminense

*Nash problem II*, 06/13/2014, FRG Special Month in Ann Arbor, Univ. of Michigan

*Terminal valuations and the Nash problem*, 05/14/2014, IMPA

*Discrepancies on non-Q-Gorenstein varieties*, 02/25/2014, Univ. of Illinois at Chicago

*Schubert varieties, arc spaces, and LCT's*, 02/17/2014, LEGAL 2014, Teresópolis

*Jacobian discrepancies and rational singularities*, 10/31/2013, Univ. Federal do Rio de Janeiro

*Jacobian discrepancies and rational singularities*, 09/18/2013, 2° Congr. Jóvenes Invest., Seville

*Jacobian discrepancies and rational singularities*, 08/30/2013, COLGA, Univ. Federal Fluminense

*Inversion of adjunction, arc spaces and Jacobian discrepancies*, 08/02/2013, NCTS/TPE, Taiwan

*Jacobian discrepancies and rational singularities*, 07/29/2013, NCTS/TPE, Taiwan

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| INVITED TALKS (CONT.) | *Jacobian discrepancies and rational singularities*, 07/04/2013, 14th ALGA Meeting, Teresópolis |
| | *Jacobian discrepancies and rational singularities*, 04/17/2013, IMPA |
| | *Arcs on determinantal varieties II — Motivic integration*, 04/02/2013, Univ. Federal Fluminense |
| | *Arcs on determinantal varieties*, 03/26/2013, Universidade Federal Fluminense |
| | *Singularities in birational geometry and multiplier ideals*, 03/08/2013, University of Oklahoma |
| | *Jacobian discrepancies and rational singularities*, 04/14/2012, WAGS, University of Washington |
| | *Discrepancies*, 03/14/2012, University of Illinois at Chicago |
| | *Jacobian discrepancies and rational singularities*, 02/21/2012, Ohio State University |
| | *Discrepancies and Nash blowing-ups*, 02/08/2012, Purdue University |
| | *Jacobian discrepancies and rational singularities*, 02/08/2012, Purdue University |
| | *Jacobian discrepancies and rational singularities*, 10/23/2011, AMS Special Session, Utah |
| | *Arcs on determinantal varieties*, 04/15/2011, Brown University |
| | *Geometry of arcs under birational maps*, 11/07/2010, AMS Special Session, Notre Dame |
| | *Arcs on determinantal varieties*, 09/18/2009, University of Notre Dame |
| | *Arcs on determinantal varieties*, 09/08/2009, University of Utah |
| | *Arcs on determinantal varieties*, 12/10/2008, University of Michigan |
| | *Jet schemes, contact loci and singularities*, 03/03/2005, University of Valladolid (Spain) |
| LECTURE SERIES | *Course on valuation theory and Berkovich spaces*, 01/2011 − 05/2011, University of Utah |
| EXPOSITORY TALKS | *Algebraic Geometry: A crash course for differential geometers*, 01/2012, Univ. of Santiago de Comp. |
| | *Introduction to Python and Sage for mathematicians*, 07/2014, Univ. of Toronto |
| | *The dual complex of singularities (after de Fernex, Kollár, Xu)*, 11/2013, IMPA |
| | *Arakelov Geometry: Green Currents*, 05/2013, IMPA |
| | *Dynamics of automorphisms of compact complex surfaces*, 05/2013, Univ. Federal Fluminense |
| | *The cohomology of p-adic symmetric spaces*, 02/2011, University of Utah |
| | *Introduction to Berkovich spaces*, 04/2010, University of Utah |
| | *Introduction to G.I.T.*, 11/2008, University of Illinois at Chicago |
| | *Toric varieties*, 01/2008 − 05/2008, University of Illinois at Chicago |
| | *Complete conics*, 11/2007, University of Illinois at Chicago |
| | *The proof of resolution of singularities*, 09/2006 − 12/2007, University of Illinois at Chicago |
| | *Intersection theory*, 08/2005 − 01/2006, University of Illinois at Chicago |
| | *Tropical algebraic geometry and Bernstein's theorem*, 04/2005, University of Illinois at Chicago |
| | *Positivity in algebraic geometry*, 09/2004 − 03/2005, University of Illinois at Chicago |
| | *D-Modules and derived categories*, 03/2003 − 05/2003, University of Illinois at Chicago |

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## GRANTS AND AWARDS

Bolsista Ciência sem Fronteiras (Atração Jovens Talentos), 02/2013 − 11/2015, CNPq, Brasil

Fulbright Fellowship, 08/2003 − 05/2005, Spanish-American Fulbright Commission

Master's Thesis Travel Grant, 02/2003 − 05/2003, Caixa Galicia Foundation

Scholarship for the Realization of Graduate Studies, 10/2001 − 08/2003, Xunta de Galicia

Premio Nacional de Fin de Carrera de Educación Universitaria (Mención Especial)
(National Award of University Education, Honorable Mention)
2001 − Granted by the Ministry of Education and Culture of Spain

Undergraduate Research Scholarship, 2000 − 2001, Ministry of Education and Culture of Spain

## SERVICE

Referee for *Communications in Algebra, Journal of Algebra, Journal of Algebraic Geometry, Journal of Pure and Applied Algebra*, and *Pacific Journal of Mathematics*.

Co-organizer of the *School on Birational Geometry and Moduli Spaces — VIGRE Mini-course*, June 2010, University of Utah.

Co-organizer of the Algebraic Geometry Seminar at the University of Utah.

Co-organizer of the Algebra Seminar at the Universidade Federal Fluminense.

## TEACHING EXPERIENCE

Foundations of Analysis II, Lecturer, Spring 2012, University of Utah

Foundations of Analysis II, Lecturer, Fall 2011, University of Utah

Special Topics in Algebraic Geometry: Course on Valuation Theory and Berkovich Spaces, Lecturer, Spring 2011, University of Utah

Partial Differential Equations for Engineering Students, Lecturer, Spring 2011, University of Utah

Introduction to Complex Variables, Lecturer, Fall 2010, University of Utah

Calculus II, Lecturer, Spring 2010, University of Utah

Calculus I, Lecturer, Fall 2009, University of Utah

Calculus III Lab (Maple), Teaching Assistant, Fall 2008, University of Illinois at Chicago

Differential Equations, Teaching Assistant, Summer 2008, University of Illinois at Chicago

Calculus III, TA Lecturer, Spring 2008, University of Illinois at Chicago

Emerging Scholars Workshop for Calculus I, Instructor, Spring 2007, University of Illinois at Chicago

Precalculus, Teaching Assistant, Spring 2006, University of Illinois at Chicago

Precalculus, Teaching Assistant, Fall 2005, University of Illinois at Chicago

## CONFERENCES ATTENDED

*Congreso de la RSME 2015*, 02/2015, University of Granada

*FRG Special Month in Ann Arbor*, 05/2014, University of Michigan

*Positive Characteristic Algebraic Geometry Workshop*, 03/2014, Univ. of Illinois at Chicago

*Liberdade em Geometria Algébrica, LEGAL 2014*, 02/2014, Teresópolis, Brasil

*New Aspects on Singularity Theory*, 09/2013, ICMAT, Madrid

*2° Congreso de Jóvenes Investigadores, RSME*, 09/2013, University of Seville

*Algebra and Geometry and Topology of Singularities, Luengo 60th*, 09/2013, Miraflores de la Sierra

*13th ALGA Meeting*, 06/2013, Teresópolis, Brasil

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<table>
<tr><td>CONFERENCES<br>ATTENDED<br>(CONT.)</td><td>

*YMIS 13: Seventh Meeting for mathematicians in Segovia*, 02/2013, University of Valladolid

*Western Algebraic Geometry Symposium*, 04/2012, University of Washington

*Singularities in Com. Algebra and Alg. Geometry, AMS Sectional Meeting*, 03/2012, Univ. of Kansas

*Special Session on Algebraic Geometry, AMS Sectional Meeting*, 10/2011, University of Utah

*Western Algebraic Geometry Symposium*, 10/2011, Colorado State University

*AIM Workshop: Relating test ideals and multiplier ideals*, 08/2011, AIM

*$2^{nd}$ International Conference and Workshop on Valuation Theory*, 07/2011, Segovia/El Escorial

*Western Algebraic Geometry Symposium*, 04/2011, Stanford University

*Singularities in Algebraic Geometry, AMS Sectional Meeting*, 11/2010, Univ. of Notre Dame

*Summer School "Berkovich spaces"*, 06/2010, Institut de Mathématiques de Jussieu, Paris

*School on Birational Geometry and Moduli Spaces — VIGRE Mini-course*, 06/2010, Univ. of Utah

*Western Algebraic Geometry Symposium*, 05/2010, University of British Columbia

*Combinatorial, Enumerative and Toric Geometry*, 03/2009, MSRI

*Modern Moduli Theory*, 02/2009, MSRI

*Classical Algebraic Geometry Today*, 01/2009, MSRI

*Michigan-Ohio State-UIC Workshop on Algebraic Geometry*, 10/2008, University of Michigan

*Alg. Geometry and Commutative Alg. (Hartshorne's 70th)*, 04/2008, Univ. of Illinois at Chicago

*Michigan-Ohio State-UIC Workshop on Algebraic Geometry*, 10/2007, University of Michigan

*Algebraic Geometry Session, AMS Meeting*, 10/2007, DePaul University

*Hot Topics: Minimal and Canonical Models in Algebraic Geometry*, 04/2007, MSRI

*UIC-Purdue Workshop on Alg. Geom. and Comm. Alg.*, 12/2006, Purdue Univ., West Lafayette

*International Congress of Mathematicians*, 08/2006, Madrid

*Satellite Conference on Algebraic Geometry*, 08/2006, University of Valladolid (Segovia Campus)

*Moduli Spaces and Arcs in Algebraic Geometry*, 08/2006, University of Cologne

*Recent Developments in Higher Dimensional Alg. Geom. (JAMI)*, 03/2006, Johns Hopkins Univ.

*AMS Summer Institute in Algebraic Geometry*, 07/2005 and 08/2005, University of Washington

*Graduate Student Workshop for AMS Summer Inst. in Alg. Geom.*, 07/2005, Univ. of Washington

*YMIS 2005: First Meeting for Young Mathematicians in Sedano*, 02/2005, University of Valladolid

*PRAGMATIC 2004: Hyperbolicity of Complex Varieties*, 08/2004 and 09/2004, Univ. of Catania

*Midwest Comm. Alg. and Geom. Meeting (Lipman's fest)*, 05/2004, Purdue Univ., West Lafayette

*Asymptotic and Effective Results in Complex Geom. (JAMI)*, 03/2004, Johns Hopkins University

*Cohomological Methods in Algebraic Geometry*, 09/2002, University of Santiago de Compostela

*Seminar on Higher Algebraic Geometry*, 07/2002, University of Santiago de Compostela

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<tr><td>TECHNICAL<br>SKILLS</td><td>

Operating Systems: Unix, Linux, OS X, Microsoft Windows.
Programming Languages: Python, FORTRAN, C, Java, HTML, PHP.
Others: Sage, Mathematica, Maple, Singular, Macaulay2, TEX, LATEX.

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**LANGUAGES**

Native Speaker of Spanish and Galician
Fluent in English and Portuguese
Reading skills in French and Italian

**REFERENCES**

Tommaso de Fernex, University of Utah

Lawrence Ein, University of Illinois at Chicago

Javier Fernández de Bobadilla, Instituto de Ciencias Matemáticas (ICMAT)

Mircea Mustaţă, University of Michigan