

Valente Ramírez

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Profile

Mathematician with an international track record. My research has been in the areas of complex differential equations, dynamical systems and analytic/algebraic geometry. Interested in computational research, mathematics education, statistics and data science. Experienced combining analytic and computational methods to solve research problems and communicating abstract ideas to a diverse audience. Currently looking for a position where I can apply my knowledge and problem-solving skills to meaningful real life problems in a collaborative way.

Employment and Education

Institut de Recherche Mathématique de Rennes (IRMAR)

Rennes, France

LEBESGUE POSTDOCTORAL RESEARCH FELLOW

Oct. 2017 – Sep. 2019

- Marie Skłodowska-Curie Fellow
- Campus France Fellow

Cornell University

Ithaca NY, United States

PH.D. IN MATHEMATICS, M.SC. IN MATHEMATICS

Aug. 2012 – Aug. 2017

- Thesis: “Quadratic vector fields on the complex plane: rigidity and analytic invariants”. doi: [10.7298/X48913Z1](https://doi.org/10.7298/X48913Z1).
- Advisor: Yulij Sergeevich Ilyashenko

Universidad Nacional Autónoma de México (UNAM)

Mexico City, Mexico

B.SC. IN MATHEMATICS

Aug. 2007 – Dec. 2011

- Thesis: “Strong topological invariance of the monodromy group at infinity for quadratic vector fields”.
- Advisor: Laura Ortiz-Bobadilla

University of California Berkeley

Berkeley CA, United States

INTERNATIONAL EXCHANGE STUDENT

Fall 2009

Publications

- [8] F. Loray and V. Ramírez. “A map between moduli spaces of connections” (*submitted*). Preprint: [arXiv: 1910.13535v1](https://arxiv.org/abs/1910.13535v1) (2019).
- [7] A. Guillot and V. Ramírez. “On the multipliers at fixed points of quadratic self-maps of the projective plane with an invariant line”. *Comput. Methods Funct. Theory*. **19**, no. 4, 687–716. doi: [10.1007/s40315-019-00293-w](https://doi.org/10.1007/s40315-019-00293-w) (2019).
- [6] Yu. Kudryashov and V. Ramírez. “Spectra of quadratic vector fields on \mathbb{C}^2 : The missing relation”. To appear in: *Mosc. Math. J.* Preprint: [arXiv: 1705.06340v2](https://arxiv.org/abs/1705.06340v2) (2018).
- [5] V. Ramírez. “Twin vector fields and independence of spectra for quadratic vector fields”. *J. Dynam. Control Syst.* **23**, no. 3, 623–633. doi: [10.1007/s10883-016-9344-5](https://doi.org/10.1007/s10883-016-9344-5) (2017).
- [4] V. Ramírez. “The Woods Hole trace formula and indices for vector fields and foliations on \mathbb{C}^2 ” (*unpublished notes*). Available at: [arXiv: 1608.05321v1](https://arxiv.org/abs/1608.05321v1) (2016).
- [3] V. Ramírez. “The utmost rigidity property for quadratic foliations on \mathbb{P}^2 with an invariant line”. *Bol. Soc. Mat. Mex.* **23**, no. 2, 759–813. doi: [10.1007/s40590-016-0127-5](https://doi.org/10.1007/s40590-016-0127-5) (2017).
- [2] V. Ramírez. “An example of a non-algebraizable singularity of a holomorphic foliation”. *Enseign. Math.* **62**, no. 1/2, 7–14. doi: [10.4171/LEM/62-1/2-3](https://doi.org/10.4171/LEM/62-1/2-3) (2016).
- [1] V. Ramírez. “Strong topological invariance of the monodromy group at infinity for quadratic vector fields”. *J. Singul.* **9**, 193–202. doi: [10.5427/jsing.2014.9n](https://doi.org/10.5427/jsing.2014.9n) (2014).

Teaching Experience

Cayuga Correctional Facility

Moravia NY, United States

INSTRUCTOR

Aug. 2016 – Dec. 2016

Mathematical Explorations

Fall 2016

Department of Mathematics, Cornell University

Ithaca NY, United States

TEACHING ASSISTANT

Aug. 2013 – May 2016

Totally Awesome Mathematics

Spring 2016

Multivariable Calculus for Engineers

Fall 2014

Differential Equations and Dynamical Systems

Fall 2013

Facultad de Ciencias, Universidad Nacional Autónoma de México

Mexico City, Mexico

TEACHING ASSISTANT

Aug. 2010 – May 2012

Ordinary Differential Equations III

Spring 2012

Ordinary Differential Equations II

Fall 2011

Real Analysis II

Spring 2011

Real Analysis I

Fall 2010

Differential Topology I

Fall 2010

Distinctions

GRANTS

PRESTIGE co-Financing Grant Award · Coordinated by Campus France · Co-financed under the Marie Skłodowska-Curie Actions – COFUND of the FP7 · €30.000

2017 – 2019

FELLOWSHIPS

Conacyt Fellow (Becario en el Extranjero) · Consejo Nacional de Ciencia y Tecnología

2013 – 2017

Graduate School Fellow · Cornell University Graduate School

2015 – 2017

Beca Complemento SEP · DGRI Secretaría de Educación Pública

2013 – 2015

Cornell Sage Fellowship · Department of Mathematics Cornell University

2012 – 2013

Beca SIBES de Titulación · Secretaría de Educación Pública

2011 – 2012

Beca Conacyt de Tesista · Consejo Nacional de Ciencia y Tecnología

2010 – 2011

Fundación Telmex Fellow · Programa Educativo Fundación Telmex

2007 – 2011

AWARDS

Eleanor York Award · For academic achievement and promise · Department of Mathematics, Cornell University

2014

Gabino Barrera Medal · To the top student in the class of 2007–2011 · Universidad Nacional Autónoma de México

2013

Sotero Prieto Medal · To the best undergraduate thesis in mathematics · Sociedad Matemática Mexicana

2012

Beca de Excelencia Académica · Prize awarded for academic merit · Secretaría de Educación Pública

2010

Beca de Excelencia Académica · Prize awarded for academic merit · Secretaría de Educación Pública

2009

Beca de Excelencia Académica · Prize awarded for academic merit · Secretaría de Educación Pública

2008

State Youth Award · Awarded for academic achievement · State Government of San Luis Potosí

2006

COMPETITIONS

Honor Mention · Pierre Fermat Mathematics Competition · Instituto Politécnico Nacional

2008

Third Place · Pierre Fermat Mathematics Competition · Instituto Politécnico Nacional

2007

Second Place · Pierre Fermat Mathematics Competition · Instituto Politécnico Nacional

2006

Honor Mention · Asian Pacific Mathematics Olympiad · Canadian Mathematical Society

2006

First Place · Mexican Mathematics Olympiad · Sociedad Matemática Mexicana

2006

First Place · Mexican Mathematics Olympiad · Sociedad Matemática Mexicana

2005

Third Place · Mexican Mathematics Olympiad · Sociedad Matemática Mexicana

2004

Talks and Presentations

RESEARCH PRESENTATIONS IN CONFERENCES AND SCHOOLS

ENCUENTRO DE FOLIACIONES Y SINGULARIDADES	<i>Mexico City, Mexico</i>	<i>Aug. 2018</i>
GEOMETRY OF SINGULARITIES AND DIFFERENTIAL EQUATIONS (POSTER)	<i>Santander, Spain</i>	<i>Jun. 2017</i>
HOLOMORPHIC FOLIATIONS IN ALSACE (POSTER)	<i>Strasbourg, France</i>	<i>Oct. 2017</i>
IV ENCUENTRO CONJUNTO RSME-SMM	<i>Valladolid, Spain</i>	<i>Jun. 2017</i>
CIMPA SCHOOL ON SINGULARITY THEORY IN TOPOLOGY, GEOMETRY AND FOLIATIONS	<i>Cuernavaca, Mexico</i>	<i>Nov. 2014</i>
ATTRACTORS, FOLIATIONS AND LIMIT CYCLES (POSTER)	<i>Moscow, Russia</i>	<i>Jan. 2014</i>
DYNAMICAL SYSTEMS SUMMER SCHOOL	<i>Dubná, Russia</i>	<i>Jun. 2013</i>
46TH SPRING TOPOLOGY AND DYNAMICS CONFERENCE	<i>Mexico City, Mexico</i>	<i>Mar. 2012</i>
XLIV CONGRESO NACIONAL DE LA SMM	<i>San Luis Potosí, Mexico</i>	<i>Oct. 2011</i>
ALGEBRAIC METHODS IN GEOMETRY: COMMUTATIVE AND HOMOLOGICAL ALGEBRA IN FOLIATIONS AND SINGULARITIES (POSTER)	<i>Guanajuato, Mexico</i>	<i>Sep. 2011</i>

RESEARCH PRESENTATIONS IN COLLOQUIA AND SEMINARS

SÉMINAIRE DE GÉOMÉTRIE ANALYTIQUE, IRMAR	<i>Rennes, France</i>	<i>Sep. 2019</i>
MATHEMATICS COLLOQUIUM, BERNOULLI INSTITUTE	<i>Groningen, The Netherlands</i>	<i>Feb. 2019</i>
SÉMINAIRE ANALYSE, IRMA	<i>Strasbourg, France</i>	<i>May 2018</i>
SÉMINAIRE DE SYSTÈMES DYNAMIQUES, IMT	<i>Toulouse, France</i>	<i>Apr. 2018</i>
SÉMINAIRE DE SYSTÈMES DYNAMIQUES ET GÉOMÉTRIE, LAREMA	<i>Angers, France</i>	<i>Jan. 2018</i>
SÉMINAIRE DE GÉOMÉTRIE ANALYTIQUE, IRMAR	<i>Rennes, France</i>	<i>Oct. 2017</i>
DYNAMICAL SYSTEMS SEMINAR, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>May 2017</i>
DYNAMICAL SYSTEMS SEMINAR, INSTITUTE FOR MATHEMATICAL SCIENCES	<i>Stony Brook, USA</i>	<i>Apr. 2017</i>
DYNAMICAL SYSTEMS SEMINAR, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Nov. 2016</i>
DYNAMICAL SYSTEMS SEMINAR, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Sep. 2014</i>
SÉMINAIRE DE GÉOMÉTRIE ANALYTIQUE, IRMAR	<i>Rennes, France</i>	<i>Jun. 2014</i>
DYNAMICAL SYSTEMS SEMINAR, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Feb. 2014</i>
DYNAMICAL SYSTEMS SEMINAR, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Dec. 2012</i>
SEMINARIO DE SINGULARIDADES Y FOLIACIONES, INSTITUTO DE MATEMÁTICAS UNAM	<i>Mexico City, Mexico</i>	<i>Mar. 2011</i>

EXPOSITORY TALKS

SEMINARIO DE SINGULARIDADES Y FOLIACIONES, INSTITUTO DE MATEMÁTICAS UNAM	<i>Mexico City, Mexico</i>	<i>Aug. 2016</i>
THE OLIVETTI CLUB, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Apr. 2016</i>
SEMINARIO DE SINGULARIDADES Y FOLIACIONES, INSTITUTO DE MATEMÁTICAS UNAM	<i>Mexico City, Mexico</i>	<i>Sep. 2015</i>
LETTLE TOPOLOGY SEMINAR, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Mar. 2015</i>
THE OLIVETTI CLUB, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Mar. 2015</i>
THE OLIVETTI CLUB, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Nov. 2013</i>
DYNAMICAL SYSTEMS SUMMER SCHOOL	<i>Dubná, Russia</i>	<i>Jun. 2013</i>
THE OLIVETTI CLUB, CORNELL UNIVERSITY	<i>Ithaca NY, USA</i>	<i>Oct. 2012</i>

Outreach and Volunteer Work

Cornell Prison Education Program

Ithaca NY, United States

INSTRUCTOR, TUTOR AND CONSULTOR

Instructor for the course MATH 1300 "Mathematical Explorations" · Cayuga Correctional Facility	<i>Fall 2016</i>
Tutor for the MATH 102 "Introduction to Algebra" course · Auburn Correctional Facility	<i>Fall 2015</i>
Member of the Mathematics Committee for the Pedagogy in Prison program	<i>2015 – 2017</i>

ORGANIZATION AND RESPONSABILITIES

Graduate program class representative	2014 – 2017
Organizer of the Dynamical Systems Seminar	2014 – 2017
Co-organizer of the What Is Seminar	Spring 2013
Co-organizer of the Olivetti Club Seminar	Fall 2012

Programming Skills

Languages Python, R, LaTeX, Bash

Systems and tools Unix, Git, SageMath, Jupyter, Macaulay2, SciPy, Keras/Tensorflow

Languages

Spanish Native

English Bilingual

French Intermediate (B2 level)

Dutch Beginner (A2 level)