

Irving Calderón

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Academic positions

2021-present **Postdoctoral research associate**, *Durham University*.
Funded by the ERC grant *UBIQGAP* of Michael Magee

Education

2018-2021 **PhD in Mathematics**, *Université Paris-Saclay*.

Thesis: *Homogeneous Dynamics and S-integral quadratic forms*

Advisor: Yves Benoist

2017-2018 **Master 2 «Analyse, Arithmétique et Géométrie»**, *Université Paris-Saclay*.

Dissertation: *The space of 2-lattices in 3-space*

Advisor: Yves Benoist

2015-2017 **MS in Mathematics**, *Universidad Nacional Autónoma de México*.

Dissertation: *Órbitas cerradas en flujos casi-geodésicos*

Advisor: Ana Rechtman

2010-2015 **BA in Mathematics**, *Universidad Nacional Autónoma de México*.

Dissertation: *Flujos de Ricci combinatorios en superficies*

Advisor: Pablo Suárez

Publications and preprints

4. **Explicit spectral gaps for Schottky subgroups of $SL(2, \mathbb{Z})$** , with M. Magee, 2022 (preprint).
3. **S -integral quadratic forms and homogeneous dynamics**, submitted to *Mémoires de la SMF*.
2. **Rigidity of the second symmetric product of the pseudo-arc**, with R. Hernández and A. Illanes. *Topology Appl.* 221 (2017), 440-448.
1. **Being semi-Kelley does not imply semi-smoothness**, with E. Castañeda, C. Islas, D. Maya and F. Ruiz. *Questions Answers Gen. Topology* 32 (2014), no. 1, 73-77.

Invited talks

- Sep 2022 *Dinámica homogénea y formas cuadráticas S -ádicas. Seminario Guillermo Torres de Geometría y Topología, IMUNAM CdMX*
- Aug 2022 *Un vistazo a la dinámica homogénea. Coloquio IMUNAM CdMX*
- Mar 2022 *S -adic quadratic forms and homogeneous dynamics, New England Dynamics and Number Theory Seminar (online)*

- Nov 2021 Équivalence de formes quadratiques et dynamique homogène. *Paroles aux jeunes chercheurs en géométrie et dynamique, CIRM Luminy*
- Oct 2021 S -integral quadratic form and homogeneous dynamics. *Spectra/Moduli Seminar, Durham*
- Sep 2020 Un critère effectif d'équivalence pour formes quadratiques entières. *Séminaire de topologie et géométrie, Orsay*
- Jul 2020 Formes quadratiques, arithmétique et...dynamique !?!? *Séminaire de doctorants, Orsay.*
- Oct 2018 The space of 2-lattices in \mathbb{R}^3 . *Arbeitsgemeinschaft "Rigidity of Stationary Measures", Oberwolfach*
- Apr 2017 Órbitas cerradas en flujos casigeodésicos. *Seminario de estudiantes, IMUNAM Cuernavaca*
- Mar 2017 Variedades hiperbólicas. *Seminario de becarios, IMUNAM CdMX.*
- Mar 2016 Demostraciones inesperadas. *Seminario de becarios, IMUNAM CdMX.*

Conferences attended

- 2022 *Arbeitsgemeinschaft "Higher Teichmüller Theory" (Oberwolfach), Analytic and Geometric Aspects of Spectral Theory (CMO Oaxaca), Marc Burger's Prime (ETH Zürich),*
- 2019 *Paroles aux jeunes chercheurs en Géométrie et Dynamique (Nancy, France), Dynamics of group actions, a conference in honor of Yves Benoist (Cetraro, Italy), Groups of Dynamical Origin II (Mexico City)*
- 2017 *Groups of Dynamical Origin (Mexico City)*
- 2016 *Workshop on Geometry and Topology (Oaxaca, Mexico), KukulKAM School in Conservative Dynamics (Yucatan, Mexico)*
- 2015 *8th Minimeeting on Differential Geometry (CIMAT, Guanajuato), IX Workshop on Continuum Theory and Hyperspaces (Queretaro, Mexico)*
- 2013 *VII Workshop on Continuum Theory and Hyperspaces (Toluca, Mexico)*
- 2012 *VI Workshop on Continuum Theory and Hyperspaces (Puebla, Mexico)*

Grants and awards

- 2018 PhD scholarship Jean-Pierre Aguilar from "Fondation CFM pour la recherche"
- 2017 M2 scholarship from the "Fondation mathématique Jacques Hadamard"
- 2014 ExxonMobil research grant
- 2013 Second place, IMC
- 2010 Gold medal, XXV Iberoamerican Mathematical Olympiad
- 2010 Bronze medal, LI International Mathematical Olympiad

Other activities

- 2022-present I organize a reading group for PhD students and postdocs at Durham. The topics we have studied so far are: representations of compact Lie groups, construction of Ramanujan graphs of every size and degree.
- 2012-2015 Member of the Organizing Comitee of the Mexican Mathematical Olympiad

Languages

Spanish mother tongue

French fluent

English fluent, TOEFL 109

Italian basic

Computer skills

Latex, bases of Python and Sage