

Pablo Portilla Cuadrado

Academic Qualification

- 2021 – Currently **Postdoc**, *Université de Lille - Laboratoire Paul Painlevé*, Lille, France.
- 2019–2021 **Postdoc**, *CIMAT*, Guanajuato, México.
- 2018–2019 **Postdoc**, *UNAM (IMATE)*, Cuernavaca, México.
- 2014–2018 **PhD**, *ICMAT-UCM*, Madrid.
“Monodromies as tête-à-tête graphs” under the supervision of Javier Fernández de Bobadilla and María Pe Pereira.
- 2012–2013 **Advanced Mathematics MSc**, *Complutense University*, Madrid.
- 2007–2012 **Licenciatura in Mathematical Science**, *Complutense University*, Madrid.
5 year spanish program equivalent to Bachelor

Scholarships, stays and visits

- 2022 **Short visit at SNU**, *Seoul*, South Korea, 2 week visit.
Mini-course on plane curve singularities and two talks given.
- 2022 **Stay at VIASM**, *Hanoi*, Vietnam, 6 week stay.
Two talks given, one of them at a congress in Halong Bay.
- 2016 **Short stay grant at Northeastern University**, *Boston*, USA.
3 month stay at Northeastern University, funded by 2016 EEBB (short term stays) scholarship from Ministerio de Educación of Spain.
- 2015 **Short stay grant Columbia University**, *New York*, USA.
4 month stay at Columbia University as a Visiting Scholar, funded by 2015 EEBB (short term stays) scholarship from Ministerio de Educacion of Spain.
- 2014–2018 **Severo Ochoa - FPI**, *ICMAT*.
4-year scholarship for doing the PhD thesis
- 2011–2012 **Colaboración en departamentos**, *Colaboration with department of Geometry and Topology*, 9 month scholarship.

Papers

On a quadratic form associated with a surface automorphism and its applications to Singularity Theory, *Joint work with L. Alanís-López, E. Artal, C. Bonatti, X. Gómez-Mont, M. González Villa*, *Indagationes Mathematicae* Volume 33, Issue 4, July 2022, Pages 816-843, [Journal link](#).

Vanishing cycles, plane curve singularities and framed mapping class groups, *Joint work with Nick Salter*, *Geometry & Topology* 25 (2021) 3179–3228, [Journal link](#).

Positive factorizations of pseudoperiodic homeomorphisms, *Mathematische Annalen* volume 379, pages 1173–1203 (2021), [Journal link](#).

Mixed tête-à-tête twists as monodromies associated with holomorphic function germs, *Joint work with Baldur Sigurðsson*, *Geometriae Dedicata* volume 210, pages 43–64 (2021), [Journal link](#).

Tête-à-tête twists, monodromies and representations of elements of mapping class groups, *Joint work with Norbert A'Campo, Javier Fernández de Bobadilla and María Pe Pereira*, *Annales de l'Institut Fourier*, Tome 71 (2021) no. 6, pp. 2649-2710., [Journal link](#).

Teaching

- 2021 (Feb-Jun) **Homotopical Topology**, *CIMAT*, Guanajuato, Mexico.
Master and PhD course.
- 2020 (Feb-Jun) **Mapping Class Groups**, *CIMAT*, Guanajuato, Mexico.
Master and PhD course.
- 2020 (August-December) **Singularities of plane curves**, *CIMAT*, Guanajuato, Mexico.
Master and PhD course.
- 2020 (Feb-Jun) **Mapping Class Groups**, *CIMAT*, Guanajuato, Mexico.
Master and PhD course.
- 2016 **Algebraic Equations**, *UCM*, Madrid, Spain.
Teacher assistant for a 2nd year undergraduate course.

Selected Conferences, Seminars and Minicourses

- 20 Jun 2023 **Semester "Singularities and low dimensional topology - The Interactive Workshop**, *Alfred Renyi Institute*, Budapest, Hungary.
The total spine of the Milnor fibration of a plane curve
- 13 Jun 2023 **"Algebraic and topological interplay of algebraic varieties. A Conference in Honor of the 60th Birthday of Enrique Artal and the 55th Birthday of Alejandro Melle"**, *Jaca*, Spain.
Vanishing polyhedrons for plane curve singularities
- 8 Dec 2022 **Topology, Geometry, and Algebra seminar**, *Université de Nantes*, Nantes, France.
A natural spine for Milnor fibers of isolated plane curve singularities
- 10 Oct - 21 Oct 2022 **BCAM-Severo Ochoa PhD Course**, *BCAM*, Bilbao, Spain.
20h course titled "Classical Tools in Differential Topology"
- 4 Jul - 8 Jul 2022 **Meeting of the GDR singularities for 2022**, *Centre Paul Langevin*, Aussois, France.
Characterizing the geometric monodromy group of a plane curve singularity
- 24 Apr - 26 Apr 2022 **Workshop on Algebraic Geometry and Singularity Theory**, *VIASM*, Hanoi, Vietnam.
Positive factorizations of pseudo-periodic homeomorphisms
- 14 Dec 2021 **Géométrie des espaces singuliers seminar**, *VIASM*, Lille, France.
Monodromies on links of normal complex surface singularities: tête-à-tête graphs and positive factorizations
- 7 Dec 2021 **Géométrie des espaces singuliers seminar**, *VIASM*, Lille, France.
Characterizing the geometric monodromy group of an isolated plane curve singularity
- 16 Sep 2021 **Geometry and Topology seminar**, *Institute of Mathematics, Vietnam Academy of Science and Technology*, Hanoi, Vietnam.
Characterizing the geometric monodromy group of a plane curve singularity

- 6 Sep - 10 Sep 2021 **Milnor Fibrations, Degenerations and Deformations from Modern Perspectives**, *CIRM*, Marseille, France.
Characterizing the geometric monodromy group of a plane curve singularity
- 14 Jun - 18 Jun 2021 **V Encuentro Conjunto RSME-SMM**, *CIMAT*, Guanajuato, Mexico.
Factorizaciones positivas de homeomorfismos pseudo-peridicos
- 8 Jun 2021 **Singularity Theory Seminar**, *UFC*, Fortaleza, Brazil.
Framed mapping class groups and plane curve singularities
- 16 Mar 2021 **Algebraic Topology Seminar**, *CIMAT*, Merida, Mexico.
Caracterizando el grupo de monodromía geométrica de una singularidad de curva plana
- 1 Mar 2021 **Graduate/Postdoc Topology and Singularities Seminar**, *University of Wisconsin-Madison*, USA.
Positive factorizations of monodromies on links of isolated complex surface singularities
- 10 Jan 2020 **Singularity Theory seminar**, *Université de Marseille*, Marseille, France.
Positive factorizations of monodromies
- 4 Nov - 15 Nov 2019 **Workshop on Topological and Analytical Methods in Singularity Theory**, *CIMAT*, Guanajuato, Mexico.
Talk and minicourse on tête-à-tête graphs and monodromies on links of surface singularities.
- 11 Mar - 15 Mar 2019 **BCM-SINGULARITIES, 4th meeting on singularities Brazil-Chile-Mexico**, *CIMAT*, Talpa, Chile.
Given talk entitled "Monodromies as tête-à-tête graphs".
- 9 Jan 2019 **Regular Seminar**, *Painlevé institute*, Lille, France.
Given talk entitled "Monodromies as tête-à-tête graphs".
- 21 Oct - 26 Oct 2018 **Lipschitz Geometry of Singularities**, *CMO*, Oaxaca, Mexico.
Attended.
- 26 Mar - 30 Mar 2018 **Workshop on arborealization of singularities and lagrangian skeleta**, *American Institute of Mathematics*, San Jose, CA, USA.
Given talk on mixed tête-à-tête graphs.
- 31 Jul - 11 Aug 2017 **ELGA at CIMAT**, *Guanajuato, Mexico*, Workshop on algebraic geometry and singularities.
Attended.
- 4 Sep - 8 Sep 2017 **Conference Young researchers**, *Universidad de Valencia*, Spain.
Given talk "Mixed tête-à-tête graphs and pseudo-periodic automorphisms".
- 7 Feb - 10 Feb 2017 **Conference in honor of Lê Dung Trang**, *Universidad de Sevilla*, Spain.
Attended.
- 29 May - 31 May 2017 **Geometric aspects of singularities**, *Université de Lille*, France.
Attended.
- 18 Jan - 27 Jan 2017 **School on Low Dimensional Topology**, *Universidad de Zaragoza*, Spain.
Attended.
- 6 Jun - 8 Jun 2016 **Second joint Conference of the Belgian, Royal Spanish and Luxembourg Mathematical Societies**, *Universidad de Logroño*, Spain.
Attended.
- 4 Nov 2016 **Worldwide Center of Mathematics**, *Boston*, USA.
Given talk on Seifert manifolds and tête-à-tête graphs graphs, [YouTube link](#).
- 7 Sep - 11 Sep 2015 **Young researchers workshop**, *Universidad de Murcia*, Spain.
Attended to Topology and Algebraic Geometry sessions and given talk on my thesis topic.

- 20 May 2016 **IUMA day on knots**, *Universidad de Zaragoza, Spain.*
Given talk on tête-à-tête graphs.
- 16 Jun 2015 **Singularity day at Universidad de Valencia**, *5 talks on singularity theory.*
Attended.
- 25 Mar 2015 **PhD student seminar at Universidad Complutense**, *Given talk on "Combinatorial Monodromy": Introduction to the notion of tête-à-tête graph.*
- 24 Nov - 5 Dec 2014 **School on Singularity Theory in Topology, Geometry and Foliations.**, *Universidad Nacional Autónoma de México, Cuernavaca, Morelos, México.*
Attended.
- 4 Aug - 8 Aug 2014 **School on singularity theory**, *Universidad de Sao Paulo, Sao Carlos, Brazil.*
Attended.
- 27 Jul - 1 Aug 2014 **13th international workshop on real and complex singularities**, *Universidad de Sao Paulo, Sao Carlos, Brazil.*
Attended.
- 4 Nov 2013 **Brief exposition on "Flat modules"**, *Renyi Institute, Budapest.*
- 25 Sept 2013 **Talk titled "Whitney's trick"**, *Complutense University, Madrid.*
Workshop of young researchers in mathematics

Organized Activities

- 12 Dec - 16 Dec 2022 **Around Brill and Noether's Report on Algebraic Functions Workshop**, *Organizer*, <https://brill-noether.github.io>.
- 24 Oct - 27 Oct 2022 **IberoSing International Workshop 2022**, *Organizer*, <https://eventos.ucm.es/86046/detail/iberosing-international-workshop-2022.html>.
- 2020 - Currently **Iberoamerican Webminar of Young Researchers in Singularity Theory and related topics**, *Organizer*, <https://iberosing.github.io/>.

Other Experience

- 2018-2020 **Developer of mathematical software Sage**, I implemented tête-à-tête graphs in Sage, Package to be reviewed.
- 2016 **Developer of mathematical software Sage**, I implemented ribbon graphs in Sage, Package already in the official repository.
- 2010-2013 **Cofounder de "Matgazine"**, *ISSN: 2174-503 X.*
Revista de matemáticas sin ánimo de lucro hecha por y para estudiantes.
- 2010-2013 **Manager of "Curiosities" section in Matgazine.**
Author of: "Números definibles" (Definable numbers) Matgazine nº2.
- 2011-2013 **Teacher at a free L^AT_EX course**, *Complutense University, Madrid.*
- 2011 **Guide at "Oberwolfach Imaginary" exposition**, *Spanish Royal Academy of Sciences, Madrid.*