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Pablo Portilla Cuadrado

Academic Qualification

2024 – Currently	**Ramón y Cajal Tenure track**, *Universidad Politécnica de Madrid*, Madrid, Spain.
2021 – 2023	**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 Corea, 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 and surveys

Plane curve singularities via divides, *(survey) Joint work with Norbert A'Campo*, Handbook of Geometry and Topology of Singularities vol. VIII, To appear.

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

2025 (Feb-Jun)	**Cálculo II**, *UPM*, Madrid, Spain. Bachelor's course.
2021 (Feb-Jun)	**Homotopical Topology**, *CIMAT*, Guanajauto, Mexico. Master and PhD course.
2020 (Feb-Jun)	**Mapping Class Groups**, *CIMAT*, Guanajauto, Mexico. Master and PhD course.
2020 (August-December)	**Singularities of plane curves**, *CIMAT*, Guanajauto, Mexico. Master and PhD course.
2020 (Feb-Jun)	**Mapping Class Groups**, *CIMAT*, Guanajauto, Mexico. Master and PhD course.
2016	**Algebraic Equations**, *UCM*, Madrid, Spain. Teacher assistant for a 2nd year undergraduate course.

Selected Conferences, Seminars and Minicourses

September 2025	**"Singularities"**, *Oberwolfach*, Germany. (Only attended)
July 2025	**"8th International Workshop on Singularities in Geometry and Applications - València VIII"**, *ICMC-USP*, São Carlos, Brazil. Vanishing arcs as unstable manifolds in the Milnor fiber
June 2025	**"Singularities in Plovdiv"**, *DoubleTree by Hilton Plovdiv Center Hotel*, Plovdiv, Bulgaria. The geometric monodromy group of ICIS curves
May 2025	**"Mid-Atlantic Geometry and Singularities Conference"**, *Universidad de La Laguna*, Tenerife, Spain. Vanishing arcs for plane curve singularities
Nov 2024	**"Recent Advances in Mirror Symmetry and Degenerations"**, *University of Miami*, Miami, USA. Vanishing arcs and cycles for plane curve singularities
Jul 2024	**"18th International Workshop on Real and Complex Singularities"**, - **Celebrating the 60th birthday of Juan José Nuño-Ballesteros**, *Universitat de Valencia*, Valencia, Spain. Vanishing arcs for isolated plane curve singularities

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 geométrico 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 mondromies
4 Nov - 15 Nov 2019	**Workshop on Topological and Analytical Methods in Singularity Theory**, *CIMAT*, Guanajauto, 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

13 Jan - 15 Jan 2025 **9th annual Meeting of the Spanish Network for Algebraic Geometry and Singularity Theory**, *Organizer*, `https://eventos.upm.es/124370`, UPM, Madrid.

25 Nov - 29 Nov 2024 **IberoSing International Workshop 2024**, *Organizer*, `hhttps://iberosing.github.io/IW24/`, UPM, Madrid.

06 Nov - 10 Nov 2023 **IberoSing International Workshop 2023**, *Organizer*, `https://iberosing.github.io/IW23/`, UG, Granada.

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`, UCM, Madrid.

2020 - 2022 **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 LATEXcourse** , *Complutense University*, Madrid.

2011 **Guide at "Oberwolfach Imaginary" exposition** , *Spanish Royal Academy of Sciences*, Madrid.