

Pablo Andújar Guerrero

Academic Curriculum Vitae

PhD in mathematics

Employment

- 2022 – **Research Fellow**, *School of Mathematics, University of Leeds*, Leeds, UK.
Working with Pantelis Eleftheriou supported by EPSRC grant.
- 2021 – 2022 **Postdoctoral Fellow**, *The Fields Institute for Research in Mathematical Sciences*, Toronto, Canada.
Fellow of “Thematic Program on Trends in Pure and Applied Model Theory” and of “Thematic Program on Tame Geometry, Transseries and Applications to Analysis and Geometry”.
- 2019 – 2021 **Teaching Assistant**, *Purdue University*, West Lafayette, USA.
Teaching recitation and calculus lectures.
- 2019 **Teaching Assistant**, *McMaster University*, Hamilton, Canada.
Grading.
- May-Dec 2017; **Wissenschaftliche Hilfskraft (Research Assistant)**, *Dr. Margaret Thomas, Universität Konstanz*, Konstanz, Germany.
Jan-Jun 2016 Working on a research project studying general topology and functional analysis in the setting of o-minimality.
- 2013-2014 **Placement in the Department of Algebra**, *Prof. Adolfo Ballester Bolinches, Universitat de València*, Valencia, Spain.
Working on the theory of semigroups and automatas.

Education

- 2019 – 2021 **PhD degree in Mathematics**, *Purdue University*, West Lafayette, USA.
- 2019 **PhD degree in Mathematics**, *McMaster University*, Hamilton, Canada.
Moved to Purdue University before completion.
- 2014–2015 **MASt degree in Mathematics**, *University of Cambridge*, Cambridge, UK.
Part III of the Mathematical Tripos.
- 2010–2014 **BSc degree in Mathematics**, *Universitat de València*, Valencia, Spain.
- 2009–2014 **BA degree in Business Administration and Management**, *Universidad Politécnica de Valencia*, Valencia, Spain.
157 out of 327 ECTS taken, degree not obtained.

Teaching

- Spring 2024 **Topology**, *University of Leeds*.
Lecturer and module manager for MATH3225.
- Spring 2021; Spring 2020 **Plane Analytic Geometry And Calculus I**, *Purdue University*.
Teaching recitation, grading quizzes, office hours.
- Fall 2020 **Applied Calculus II**, *Purdue University*.
Teaching two sections, grading quizzes, office hours.
- Fall 2019 **Ordinary Differential Equations**, *Purdue University*.
Grading homework.
- Summer 2019 **Linear Algebra II**, *McMaster University*.
Grading homework.

Publications / Research projects

- 2024 **Types in distal dp-minimal structures**, *P. Andújar Guerrero*.
In preparation.
- 2024 **Definable separability and second-countability in o-minimal structures**, *P. Andújar Guerrero*, submitted.
arXiv:<https://arxiv.org/abs/2405.07114>
- 2024 **Definable compactness in o-minimal structures**, *P. Andújar Guerrero*, submitted.
arXiv: <https://arxiv.org/abs/2405.07112>
- 2024 **A note on the cardinality of definable families of sets in o-minimal structures**, *P. Andújar Guerrero*, *Mathematical Logic Quarterly* (2024) 1–6, doi:10.1002/malq.202300030.
arXiv:<https://arxiv.org/abs/2305.12294>
- 2023 **One-dimensional definable topological spaces in o-minimal structures**, *P. Andújar Guerrero, M. Thomas, E. Walsberg*, submitted.
arXiv: <https://arxiv.org/abs/2310.04510>
- 2023 **The Marker-Steinhorn Theorem**, *P. Andújar Guerrero*, *Notre Dame Journal of Formal Logic*, accepted.
arXiv:<https://arxiv.org/abs/2306.09897>
- 2022 **Around types definable in p-adically closed fields**, *P. Andújar Guerrero, W. Johnson*, *Annals of Pure and Applied Logic* 175 (2024) 1–33, doi:10.1016/j.apal.2024.103484.
arXiv:<https://arxiv.org/abs/2208.05815>
- 2021 **Types, transversals and definable compactness in o-minimal structures**, *P. Andújar Guerrero*, submitted.
arXiv: <https://arxiv.org/abs/2111.03802>
- 2022 **Definable $(\omega, 2)$ theorem for families with VC-codensity less than 2**, *P. Andújar Guerrero*, *The Journal of Symbolic Logic* (2023) 1–10, doi:10.1017/jsl.2023.46.
arXiv:<https://arxiv.org/abs/2205.13665>

- 2020 **Directed sets and topological spaces definable in o-minimal structures**, *P. Andújar Guerrero, M. Thomas, E. Walsberg*, Journal of the London Mathematical Society (2) 104 (2021) 989-1010, doi:10.1112/jlms.12446.
arXiv: <https://arxiv.org/abs/1911.06409>
- 2015 **Part III Essay**, *Universality Problems on Banach Spaces*, University of Cambridge, Cambridge, UK.
Supervised by Dr. András Zsák.
- 2013–2014 **BSc Final Year Project**, *The theorems of Weierstrass, Stone-Weierstrass and further generalizations*, Universitat de València, Valencia, Spain.
Supervised by Prof. Manuel Maestre Vera.

Talks

- 19 Jun 2024 **Contributed talk at 75th British Mathematical Colloquium**, *University of Manchester*, “A brief story of model-theoretic (p, q) -theorems”.
- 5 Jun 2024 **Invited talk at South and East of England Model Theory Network (SEEMOD) workshop**, *Queen Mary University of London*, “Defining definable compactness”.
- 6 March 2024 **Invited talk at Models Seminar**, *University of Leeds*, *idem*.
- 21 Feb 2024 **Invited talk at Logic Seminar**, *University of Manchester*, *idem*.
- 21 Nov 2023 **Invited talk at Model theory and Groups Seminar**, *Mathematics Institute of Jussieu–Paris Rive Gauche*, *idem*.
- 17 Jul 2023 **Invited talk at Complexity Theory, Model Theory, Set Theory seminar**, *Universität Konstanz*, “NIP compressible types”.
- 26 May 2023 **Invited talk at Impromptu Leeds-McMaster Model Theory Days**, *University of Leeds*, *Idem*.
- 1 Feb 2023 **Invited talk at Models and Sets seminar**, *University of Leeds*, “O-minimal tame set-theoretic topology”.
Abstract
- 27 Jan 2023 **Invited talk at Lancashire Yorkshire Model Theory Seminar (LYMoTS)**, *University of Manchester*, “O-minimal definable topology”.
Abstract
- 18 Nov 2022 **Invited talk at Meeting of the Group of Model Theorists (MGMT)**, *University of Leeds*, “Distality”.
Abstract
- 1 Apr 2022 **Invited talk at Fields Postdoc Colloquium**, *Fields Institute*, “A brief story of (p, q) theorems”.
- 26 Mar 2022 **Invited talk at AMS Spring Central Sectional Meeting, Special Session on Model Theory and its Applications**, *Purdue University (online)*, “Type density and definable compactness in o-minimality and beyond”.
- 25 Jun 2021 **Invited talk at ASL North American Annual Meeting**, *South Bend (online)*, “Types, transversals and definable compactness in o-minimal structures”.

- 21 Mar 2021 **Contributed talk at Graduate Student Conference in Logic (GSCL) XXII**, *University of Illinois at Urbana-Champaign (online)*, “Definable Compactness”.
- 1 Feb 2021 **Invited talk at Model Theory and Applications Seminar**, *Purdue University (online)*, “Definable compactness and combinatorics in o-minimal theories”.
- 9 Oct 2018 **Invited talk at Real Algebraic Geometry and Model Theory conference (RAGMT)**, *Universität Konstanz*, “One-dimensional definable topologies in o-minimal structures”.
- 10 Aug 2018 **Invited talk at Logic Seminar of the Department of Mathematics**, *University of Illinois Urbana-Champaign*, *Idem*.
- 4 Jun 2018 **Invited talk at Oberseminar mathematische Logik, Mengenlehre und Modelltheorie**, *Universität Konstanz*, “Definable topological spaces in o-minimal structures”.

Other Academic Activities

- July 2023 **Participation in Model theory and related topics conference**, *University of Manchester*, Manchester, UK.
- May 2023 **Participation in Model theory of valued fields conference**, *CIRM*, Marseille, France.
- Jan 2023 **Participation in British Postgraduate Model Theory Conference (BPGMTC)**, *University of Leeds*, Leeds, UK.
- Jul 2022 **Participation in Practical and Structural Model Theory workshop**, *University of Leeds*, Leeds, UK.
- Jul 2018 **Participation in Donau–Rhein Modelltheorie und Anwendungen conference (DRMTA)**, *Universität Basel*, Basel, Switzerland.
- Mar 2018 **Participation in Trimester on Model Theory, combinatorics and valued fields**, *Institut Henri Poincaré, Sorbonne Université*, Paris, France.
- Jan 2018 **Participation in Research School Model Theory, Combinatorics and Valued Fields**, *CIRM*, Luminy, France.
Including presentation of poster “Directed sets and compactness in o-minimal structures”.
- Jun 2017 **Participation in Thematic Program on Unlikely Intersections, Heights, and Efficient Congruencing**, *The Fields Institute*, Toronto, Canada.
Including Workshop on O-minimality and Diophantine Applications.
- Jul 2016 **Participation in Summer School in Tame Geometry**, *Universität Konstanz*, Konstanz, Germany.
- 2012–2013 **Exchange Programme**, *Loughborough University*, Loughborough, UK.
Financed by an ERASMUS grant.

Grants/Funding

- November 2023 **Support for organization of workshop *Combinatorial Problems in Model Theory and Computer Science***, *University of Leeds*, Leeds, UK.
£1000.

- July 2023 **Research visit and invited speaker to *Complexity Theory, Model Theory, Set Theory* seminar**, *University of Konstanz*, Konstanz, Germany.
462 €.
- May 2023 **Support to participate in *Model theory of valued fields* conference**, *CIRM*, Marseille, France.
300 €.
- Summer 2020 **Summer Research Grant**, *Department of Mathematics, Purdue University*, West Lafayette, USA.
\$3600.
- Oct 2018 **Invited speaker at Conference on *Real Algebraic Geometry and Model Theory (RAGMT)***, *Universität Konstanz*, Konstanz, Germany.
407 €.
- Jul 2018 **Support to participate in *Donau–Rhein Modelltheorie und Anwendungen* conference (DRMTA)**, *Universität Basel*, Basel, Switzerland.
173 €.
- Mar 2018 **Support to participate in *Trimester on Model Theory, combinatorics and valued fields***, *Institut Henri Poincaré, Sorbonne Université*, Paris, France.
900 €.
- Jun 2017 **Support to participate in *Thematic Program on Unlikely Intersections, Heights, and Efficient Congruencing***, *The Fields Institute*, Toronto, Canada.
1343 €.
- 2010-2014 **Grant for Outstanding Qualifications**, *BSc degree in mathematics*, *Universitat de València*, obtained in 13 courses.
Total 1500 €.
- 2012-2013 **ERASMUS**, *Loughborough University*, Loughborough, UK, European programme for education abroad.
2160 €.

Languages

Spanish	Native Speaker	
English	Fluent (Proficient User C1)	<i>Certificate - IELTS (Score: 8)</i>
German	Basic User B1	<i>Certificate - Universität Konstanz</i>
Catalan	Independent User	

References

References are available on request from

Prof. Margaret Thomas, *Department of Mathematics*, Purdue University, 150 N. University Street, West Lafayette, IN 47907-2067, USA.

Phone: +1 (765) 496-1904, Email: memthomas@purdue.edu

Prof. Sergei Starchenko, *Department of Mathematics*, University of Notre Dame, 255 Hurley Bldg, Notre Dame, IN 46556, USA.

Phone: +1 (574) 631-5402, Email: sstarche@nd.edu

306 Gateway South, Marsh Lane – Leeds LS9 8BD – UK

☎ +44 7449 295 896 • +34 622 89 52 44 • ✉ pa377@cantab.net

5/6

Prof. Patrick Speissegger, *Department of Mathematics & Statistics*, McMaster University, 1280 Main St W, Hamilton, ON L8S 4L8, Canada.

Phone: +1 (905) 525-9140, Email: speisseg@math.mcmaster.ca

Prof. Saugata Basu, *Department of Mathematics*, Purdue University, 150 N. University Street, West Lafayette, IN 47907-2067, USA.

Phone: +1 (765) 494-8798, Email: sbasu@math.purdue.edu

Prof. Manuel Maestre Vera, *Departamento análisis matemático*, Universitat de Valencia, Carrer del Dr. Moliner, 46100 Burjassot, València, Spain.

Phone: +34 96-354-3903, Email: manuel.maestre@uv.es