

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

- Fall 2020 **Applied Calculus II**, *Purdue University*.
Teaching my own two sections, grading quizzes, office hours.
- Spring 2021; Spring 2020 **Plane Analytic Geometry And Calculus I**, *Purdue University*.
Teaching recitation, 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

- 2023 **Types in distal dp-minimal structures**, *P. Andújar Guerrero*.
In preparation.
- 2023 **One-dimensional definable topological spaces in o-minimal structures**, *P. Andújar Guerrero, M. Thomas, E. Walsberg*.
In preparation.
- 2023 **Cardinality of definable families of sets in o-minimal structures**, *P. Andújar Guerrero*, submitted.
arXiv:<https://arxiv.org/abs/2305.12294>
- 2023 **A shorter proof of the Marker-Steinhorn Theorem**, *P. Andújar Guerrero*, submitted.
arXiv:<https://arxiv.org/abs/2306.09897>
- 2022 **Around types definable in p-adically closed fields**, *P. Andújar Guerrero, W. Johnson*, submitted.
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*, accepted, 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

- 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.
- May 2018 **Participation in Donau–Rhein Modelltheorie und Anwendungen conference (DRMTA)**, *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: sstarcke@nd.edu

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

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

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

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