

Kevin Iván Piterman - Curriculum Vitae

Personal information

Date and place of birth January 25, 1992, City of Buenos Aires, Argentina
Nationality Argentina
Current Position Postdoctoral researcher at Philipps-Universität Marburg
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Education

10/2016 – 12/2019 Ph.D. in Mathematics (University of Buenos Aires)
Thesis: “Homotopy properties of the p -subgroup complexes”.
Advisor: Prof. Dr. Elías Gabriel Minian.
Final qualification: outstanding.
03/2012 – 06/2016 Licentiate in Mathematics (University of Buenos Aires)
Thesis: “El tipo homotópico de los posets de p -subgrupos”.
Advisor: Prof. Dr. Elías Gabriel Minian.
Final qualification: 10 over 10.

Future and past positions

07/2024 – 06/2027 Postdoctoral researcher at Vrije Universiteit Brussel (Belgium).
05/2022 – 06/2024 Postdoctoral researcher at Philipps-Universität Marburg (Germany).
01/2022 – 04/2022 Junior Postdoctoral Fellow at Institut Mittag-Leffler (Sweden).
12/2019 – 04/2022 Postdoctoral researcher at IMAS, FCEN – UBA (Argentina).
10/2016 – 12/2019 PhD candidate at IMAS, FCEN – UBA (Argentina).

Fellowships and awards

07/2024 – 06/2027 FWO Junior Postdoctoral Fellowship.
Awarded by FWO (Research Foundation - Flanders).
05/2022 – 06/2024 Alexander von Humboldt Research Fellowship for Postdocs.
Awarded by Alexander von Humboldt Foundation.
04/2020 – 04/2022 CONICET Internal Postdoctoral Fellowship.
Awarded by CONICET.
04/2017 – 03/2020 CONICET Internal Doctoral Fellowship.
Awarded by CONICET.

List of publications

- 1) (with V. Welker) Homotopy properties of the complex of frames of a unitary space. J. London Math. Soc. (2024). In press.
- 2) Maximal subgroups of exceptional groups and Quillen's dimension. Algebra Number Theory (2024). In press.
- 3) On the frame complex of symplectic spaces. J. Algebra **642** (2024), 65--94.
- 4) (with S.D. Smith) Eliminating components in Quillen's conjecture. J. Algebra **607**, Part A (2022), pp. 681-732.
- 5) An approach to Quillen's conjecture via centralisers of simple groups. Forum Math. Sigma **9** (2021), Paper No. e48, 23 pp.
- 6) (with E.G. Minian) The fundamental group of the p -subgroup complex. J. London Math. Soc. (2) **103** (2021), pp. 449-469.
- 7) (with I. Sadofschi Costa and A. Viruel) Acyclic 2-dimensional complexes and Quillen's conjecture. Publ. Mat. **65** (2021), no. 1, pp. 129-140.
- 8) A stronger reformulation of Webb's conjecture in terms of finite topological spaces. J. Algebra **527** (2019) pp. 280-305.
- 9) (with E.G. Minian) The homotopy types of the posets of p -subgroups of a finite group. Adv. Math. **328** (2018) pp. 1217-1233.

Preprints

- 1) Spherical p -group complexes arising from finite groups of Lie type (2024). [arXiv:2403.07489](https://arxiv.org/abs/2403.07489).
- 2) (with B. Brück and V. Welker) The common basis complex and the partial decomposition poset (2024). [arXiv:2402.10484](https://arxiv.org/abs/2402.10484).
- 3) (with V. Welker) Posets arising from decompositions of objects in a monoidal category (2024). [arXiv:2208.12626](https://arxiv.org/abs/2208.12626).
- 4) (with S.D. Smith) Some results on Quillen's conjecture via equivalent-poset techniques (2022). [arXiv:2204.13055](https://arxiv.org/abs/2204.13055).
- 5) (with I. Sadofschi Costa) Group actions on contractible 2-complexes II (2021). [arXiv:2102.11459](https://arxiv.org/abs/2102.11459).
- 6) Appendix of "Group actions on contractible 2-complexes I", by I. Sadofschi Costa (2021). [arXiv:2102.11458](https://arxiv.org/abs/2102.11458).

Mathematical Notes

- 1) (with L. Vendramin) Algebra with GAP. Oberwolfach preprint (2023).
- 2) (with E.G. Minian) Notas de topología diferencial. Cursos y Seminarios de Matemática, Fascículo 12 (UBA). ISSN 1851-1481. (Notes on differential topology.) Available at: http://cms.dm.uba.ar/depto/public/serie_B/serieB12.pdf

Software

- 1) **Posets** (with X. Fernández and I. Sadofschi Costa) GAP package for computations related to posets and finite topological spaces.
Available at: <https://github.com/isadofschi/posets>.
- 2) **Proteins**. Python project for the simulation of alternative structures of proteins.
Available at: <https://github.com/kevin2501/Proteins>.

Last and upcoming selected talks

- 1) Oberwolfach Workshop “Finite groups, fusion systems and applications” **(invited)**, March 2025.
- 2) BIRS Workshop “Skew Braces, Braids and the Yang-Baxter Equation” **(invited)**, May 2024.
- 3) Oberseminar in Münster University **(invited)**, April 2024.
- 4) Groups and Operator Algebras Seminar, University of Copenhagen **(invited)**, March 2024.
- 5) Oberseminar Geometrie, Topologie. Justus Liebig University Giessen **(invited)**, January 2024.
- 6) Oberwolfach Workshop “Geometric, Algebraic, and Topological Combinatorics” **(invited)**, December 2023.
- 7) Northern Group Theory conference in honour of Bernd Fischer, Bielefeld Universität **(invited)**, September 2023.
- 8) University of Málaga **(invited)**, September 2023.
- 9) Group, rings and the Yang-Baxter equation 2023, Blankenberge, June 2023.
- 10) KTH **(invited)**, April 2023.
- 11) II Encuentro RSME-UMA, Ronda **(invited)**, December 2022.
- 12) Simple groups, representation and applications. Isaac Newton Institute, University of Cambridge, July 2022.
- 13) Séminaire de Topologie Algébrique, Univ. Sorbonne Paris Nord **(invited)**, March 2022.
- 14) Institut Mittag-Leffler **(invited)**, January 2022.

Research stays

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| 19/02/2023 – 04/03/2023 | Research in pairs at MFO with L. Vendramin (Oberwolfach, Germany). |
| 04/09/2022 – 16/09/2022 | Research in pairs at CIRM with L. Vendramin (Marseille, France). |
| 22/08/2021 – 13/11/2021 | Research stay as Oberwolfach Leibniz Fellow at MFO (Oberwolfach, Germany).
Position: postdoctoral researcher fellow. |
| 30/01/2021 – 20/04/2021 | Research stay as Oberwolfach Leibniz Fellow at MFO (Oberwolfach, Germany).
Position: postdoctoral researcher fellow. |
| 29/05/2018 – 22/06/2018 | Invited by A. Murillo and A. Viruel for a research stay at the University of Málaga (Spain).
Position: doctoral researcher guest. |

Research groups

- 1) **Algebraic and Geometric Combinatorics.**
Coordinated by Volkmar Welker, at Fachbereich Mathematik und Informatik, Philipps-Universität Marburg.
- 2) **ALAN (Algebra and Analysis).**
At the Department of Mathematics and Data Science, Vrije Universiteit Brussel.
- 3) **Algebraic Topology research group.**
Coordinated by Elías G. Minian, at the Department of Mathematics, University of Buenos Aires.

Participation in research projects

- 1) PICT-2019-02338
“Topology and combinatoric and geometric group theory”.
- 2) UBACyT 2020 20020190100099BA
“Algebraic topology and geometric and combinatorial group theory”.
- 3) PIP 2017-2019 11220170100357CO
“Algebraic topology and applications”.
- 4) UBACyT 2017 20020160100081BA
“Homotopy theory and geometric group theory”.
- 5) PICT-2017-2997
“Algebraic topology and applications”.

Organisation of conferences

- 1) “Groups, rings and the Yang-Baxter equation 2023”, taking place in Blankenberge, Belgium, from 19th to 23rd June, 2023.
- 2) Special session “Grupos y topología” at the II Encuentro RSME-UMA, taking place in Ronda, Spain, from 12th to 16th December, 2022.

Participation in workshops (invited)

- 1) “Finite groups, fusion systems and applications”, MFO, March 2025.
- 2) “Skew Braces, Braids and the Yang-Baxter Equation”, BIRS, May 2024.
- 3) “Geometric, Algebraic, and Topological Combinatorics”, MFO, December 2023.
- 4) “Skew Braces and the Yang-Baxter equation”, MFO, February 2023.
- 5) “The algebra of the Yang-Baxter equation”, Będlewo, July 2022.

Other fellowships and awards

- 1) **Heidelberg Laureate Forum**
SAP grant awarded to attend the 9th Heidelberg Laureate Forum.
- 2) **Max-Planck Institute for Mathematics (Bonn)**
Obtained in June 2021 for a postdoc position at the MPIM of Bonn from June 1st 2022 to May 31th 2023. Declined for incompatibility with the Humboldt Fellowship awarded shortly after.
- 3) **Junior Fellowship Program**
Obtained in April 2021 to attend the research program “Higher Algebraic Structures in Algebra, Topology and Geometry”, at the Institut Mittag-Leffler (Sweden).
- 4) **Oberwolfach Leibniz Fellowship**
Obtained in April 2021 for a second research stay at MFO, Germany.
- 5) **Oberwolfach Leibniz Fellowship**
Obtained in May 2020 for a research stay at MFO, Germany.
- 6) **UMALCA economic aid**
Obtained in July 2018 to attend XXI Brazilian Topology Meeting (Brazil).

Referee experience

I write reviews for MathSciNet and I have been a referee for the following journals:

- 1) Journal of Combinatorial Theory, Series A.
- 2) Proceedings of the American Mathematical Society.
- 3) Topological Methods in Nonlinear Analysis.
- 4) Revista de la Unión Matemática Argentina.
- 5) The Electronic Journal of Combinatorics.
- 6) Forum of Mathematics, Sigma.

Teaching experience

03/2020 – 07/2022	Jefe de Trabajos Prácticos (“Lead” Teaching Assistant). At the Department of Mathematics, FCEN – UBA.
03/2017 – 02/2020	Ayudante de Primera (Teaching Assistant). At the Department of Mathematics, FCEN – UBA.
04/2015 – 02/2017	Ayudante de Segunda (Undergraduate Teaching Assistant). At the Department of Mathematics, FCEN – UBA.

I have taught several different courses at the University of Buenos Aires. Some of the advanced courses include Topology and Differential Topology, and more basic courses Calculus I and II (for several careers), Linear Algebra for Physics, Numeric Methods for Biology, Probability and Statistics for Computer Science and Physics, and Advanced Calculus.