

Gábor Szabó

Personal Information

Date of birth 2nd of August, 1988
Place of birth Dunaújváros, Hungary
Citizenship German
ORCID ID 0000-0001-7963-8493

Language skills

(CEFR scale) German (native), Hungarian (native), English (C1+), Dutch (C1)

Employment

since 10/2023 BOFZAP associate professor, KU Leuven.
10/2018–09/2023 BOFZAP tenure-track assistant professor, KU Leuven.
09/2017–09/2018 Postdoc at Copenhagen University, Denmark.
09/2016–08/2017 Postdoc (Research Fellow) at the University of Aberdeen, UK.
08/2015–08/2016 Postdoc (wissenschaftlicher Mitarbeiter) at WWU Münster, Germany.
09/2012–07/2015 Doctoral student at WWU Münster, Germany.
04/2009–03/2012 Student teaching assistant at WWU Münster.

Education

09/2012–07/2015 **Doctorate in mathematics** (Dr. rer. nat.) with Prof. Dr. Wilhelm Winter, WWU Münster, Germany. With grade **summa cum laude**.
Rokhlin dimension and topological dynamics
04/2011–08/2012 **Master of Science Mathematics** with Prof. Dr. Wilhelm Winter, WWU Münster, Germany. With distinction.
 \mathcal{Z} -stability of AH Algebras of Bounded Dimension
10/2008–02/2011 **Bachelor of Science Mathematics** with Prof. Dr. Dr. h.c. Joachim Cuntz, WWU Münster, Germany. With distinction.
Spectra of Maximal Commutative Subalgebras of Certain Simple C^ -Algebras*

Teaching

since 2024 Bachelor course *Analyse I* (in Dutch) at KU Leuven.
since 2019 Biyearly master course *Operator Algebras* at KU Leuven.
2019–2023 Master course *Probability and Measure* at KU Leuven.

- Winter 2019 Design and supervision of bachelor research project *Kaplansky's direct finiteness conjecture for sofic groups* (5 students), KU Leuven.
- Spring 2018 TA for *Introduction to Operator Algebras*, Copenhagen University.
- Winter 2016 Course instructor for *Analysis I*, University of Aberdeen.
- 2009–2016 TA for courses at WWU Münster: *Real and Complex Analysis*, *Analysis I*, *Functional Analysis* (2×), *Operator Algebras* (3×), *Operator Algebras II*, *K-Theory for Operator Algebras*.

Awards and funding

- 09/2024–08/2029 ERC consolidator grant “AMEN — Amenable C^* -dynamics and their classification” (EUR 1.940.875)
- 01/2020–12/2023 FWO research project “Classification of C^* -dynamics: noncommutative symmetry and time evolution” (EUR 458.445)
- 10/2019–09/2023 BOF project “Classification of C^* -dynamics: noncommutative symmetry and time evolution” granted by the research council of KU Leuven (EUR 243.200)
- 10/2018–09/2020 BOFZAP start-up grant. (EUR 100.000)
- 01/2018 Marie Skłodowska Curie fellowship (c. EUR 200.000)
- 2016 Mittag-Leffler postdoctoral fellowship (SEK 40.000)
- 2015 IMPAN guest grant (PLN 6.600)
- 2013/2016 Oberwolfach Leibniz Graduate grant for the Workshops *Noncommutative Geometry and C^* -algebras* (EUR 200 each)
- 2009–2010 WWU Münster *Pro Talent* stipend (EUR 3.600)

Supervision

- 09/2024–09/2027 Robert Neagu (postdoc).
(upcoming)
- 09/2024–08/2027 Diego Martinez (postdoc).
(upcoming)
- 09/2024– Carlos Campos (PhD student)
(upcoming)
- 09/2023–08/2024 Xiuyuan Li (Master thesis)
- 10/2023–09/2027 Sergio Girón Pacheco (postdoc, FWO fellow).
- 10/2023–09/2026 Anna Duwenig (postdoc, FWO fellow) (as co-supervisor, with Stefaan Vaes as main supervisor)
- 11/2022–10/2025 Se Jin Kim (postdoc).
since 09/2022 Paul Meunier (PhD student, FWO fellow).
- 11/2021–10/2024 Ali Imad Raad (postdoc).
- 10/2021–09/2022 Shirly Geffen (postdoc, Schmidt Israeli postdoc fellow).
- 11/2020–10/2021 Kang Li (postdoc).

10/2020–09/2022, 10/2024–09/2025 François Thilmany (postdoc, FWO fellow).
 since 09/2020 Matteo Pagliero (PhD student, FWO fellow).
 09/2020–06/2021 Emiel Lanckriet (Master thesis).
 09/2019–11/2023 Lise Wouters (PhD student, FWO fellow).
 09/2019–06/2020 Ben Bouwen (Master thesis).
 01/2019–09/2022 Baukje Debets (PhD student)

Professional Activity & Service

since 2018 Member of 7 PhD supervisory committees and member of additional 4 PhD examination committees at KU Leuven (excluding own students).

05/2024 Organizer of Oberwolfach Seminar *Classification of C^* -Algebras and Dynamics* jointly with Shirly Geffen, Christopher Schafhauser and Stuart White. This includes a 4-hour lecture series on the topics of C^* -dynamics.

2024 External PhD thesis reviewer for Petr Naryshkin (University of Münster).

2019 External PhD thesis reviewer/examiner for Andrea Vaccaro (University of Pisa, Italy) and for Luke John Ito (University of Glasgow, United Kingdom).

10/2017 Co-organizer for *Applications of the UCT for C^* -algebras*, Copenhagen. (approximately 40 participants)

06/2017 9-month PhD Assessor for Ruaridh Gardner at the University of Aberdeen.

07/2016 Co-organizer of the conference *Young Mathematicians in C^* -algebras* (YMC*A), Münster. (approximately 120 participants)

2013/2016 Coordinator for Oberwolfach Reports *Noncommutative Geometry* (joint with Selçuk Barlak) and *C^* -algebras* (joint with Hannes Thiel).
 Regular reviewer for Mathematical Reviews and zbMATH Open.

Refereed for: Annals of Mathematics, Inventiones Mathematicae, Journal/Memoirs of the EMS, Crelle's Journal, American Journal of Mathematics, Annales de l'ENS, Mathematische Annalen, Transactions/Proceedings/Memoirs of the AMS, IMRN, Proceedings/Journal of the LMS, Advances in Mathematics, Compositio Mathematica, Selecta Mathematica, Communications in Mathematical Physics, Analysis & PDE, Journal of Noncommutative Geometry, Journal of Functional Analysis, Ergodic Theory and Dynamical Systems, Münster Journal of Mathematics, Journal of Mathematical Physics, Journal of Geometry and Physics, Documenta Mathematica, Abel Symposia, International Journal of Mathematics, Indiana University Mathematics Journal, Journal of Operator Theory, Canadian Journal of Mathematics, Proceedings A of the Royal Society of Edinburgh, Proceedings of the Edinburgh Mathematical Society, Groups Geometry & Dynamics, Glasgow Mathematical Journal, Journal of Mathematical Analysis and Applications, Advances in Operator Theory, Mathematical Society of Japan, Annals of K-Theory, Journal of the Korean Mathematical Society.

Publications

- [1] M. Pagliero, G. Szabó: Classification of equivariantly \mathcal{O}_2 -stable amenable actions on nuclear C^* -algebras. 38 pp. arxiv:2309.12472.
- [2] G. Szabó, L. Wouters: Equivariant property Gamma and the tracial local-to-global principle for C^* -dynamics. 44 pp. arxiv:2301.12846.
- [3] J. Gabe, G. Szabó: The stable uniqueness theorem for equivariant Kasparov theory. To appear in Amer. J. Math., 42 pp. arxiv:2202.09809.
- [4] G. Szabó, L. Wouters: Dynamical McDuff-type properties for group actions on von Neumann algebras. To appear in J. Inst. Math. Jussieu, 37 pp. arxiv:2301.11748.
- [5] G. Szabó: Equivariant property (SI) revisited, II. To appear in Münst. J. Math., 12 pp. arxiv:2308.08878.
- [6] J. Castillejos, K. Li, G. Szabó: On tracial \mathcal{Z} -stability of simple non-unital C^* -algebras. Can. J. Math. (2023), 20 pp. arxiv:2108.08742.
- [7] J. Gabe, G. Szabó: The dynamical Kirchberg–Phillips theorem. 57 pages. Acta Math. **232** (2024), pp. 1–77.
- [8] E. Lanckriet, G. Szabó: On embeddings of extensions of almost finite actions into cubical shifts. Colloq. Math. **174** (2023), pp. 229–240.
- [9] G. Szabó: On a categorical framework for classifying C^* -dynamics up to cocycle conjugacy. J. Funct. Anal. **280** (2021), no. 8, article 108927. 66 pp.
- [10] G. Szabó: The classification of Rokhlin flows on C^* -algebras. Comm. Math. Phys. **382** (2021), pp. 2015–2070.
- [11] G. Szabó: Equivariant property (SI) revisited. Anal. PDE. **14** (2021), no. 4, pp. 1199–1232.
- [12] D. Kerr, G. Szabó: Almost finiteness and the small boundary property. Comm. Math. Phys. **374** (2020), pp. 1–31.
- [13] S. Barlak, G. Szabó: Approaching the UCT problem via crossed products of the Razak–Jacelon algebra. Groups. Geom. Dyn. **14** (2020), no. 1, pp. 137–149.
- [14] S. Barlak, G. Szabó: On diagonal quasi-free automorphisms of purely infinite simple graph C^* -algebras. 17 pages. Math. Scand. **125** (2019), no. 2, pp. 210–226.
- [15] G. Szabó: Actions of certain torsion-free elementary amenable groups on strongly self-absorbing C^* -algebras. Comm. Math. Phys. **371** (2019), no. 1, pp. 267–284.
- [16] G. Szabó, J. Wu, J. Zacharias: Rokhlin dimension for actions of residually finite groups. Ergodic Theory Dynam. Systems **39** (2019), no. 8, pp. 2248–2304.
- [17] G. Szabó: Rokhlin dimension: absorption of model actions. Anal. PDE **12** (2019), no. 5, pp. 1357–1396.
- [18] G. Szabó: Equivariant Kirchberg–Phillips-type absorption for amenable group actions. Comm. Math. Phys. **361** (2018), no. 3, pp. 1115–1154.

- [19] Y. Gutman, Y. Qiao, G. Szabó: The embedding problem in topological dynamics and Takens' theorem. *Nonlinearity* **31** (2018), no. 2, pp. 597–620.
- [20] G. Szabó: Strongly self-absorbing C^* -dynamical systems, III. *Adv. Math.* **316** (2017), no. 20, pp. 356–380.
- [21] G. Szabó: Strongly self-absorbing C^* -dynamical systems, II. *J. Noncomm. Geom.* **12** (2018), no. 1, pp. 369–406.
- [22] G. Szabó: Strongly self-absorbing C^* -dynamical systems. *Trans. Amer. Math. Soc.* **370** (2018), pp. 99–130. Corrigendum published in: *Trans. Amer. Math. Soc.* **373** (2020), pp. 7527–7531.
- [23] S. Barlak, G. Szabó, C. Voigt: The spatial Rokhlin property for actions of compact quantum groups. *J. Funct. Anal.* **272** (2017), no. 6, pp. 2308–2360.
- [24] G. Szabó: On the nuclear dimension of strongly purely infinite C^* -algebras. *Adv. Math.* **306** (2017), pp. 1262–1268.
- [25] I. Hirshberg, G. Szabó, W. Winter, J. Wu: Rokhlin dimension for flows. *Comm. Math. Phys.* **353** (2017), no. 1, pp. 253–316.
- [26] G. Szabó: Appendix to *The nuclear dimension of C^* -algebras associated to homeomorphisms* by I. Hirshberg and J. Wu. *Adv. Math.* **304** (2017), pp. 56–89.
- [27] S. Barlak, G. Szabó: Rokhlin actions of finite groups on UHF-absorbing C^* -algebras. *Trans. Amer. Math. Soc.* **369** (2017), pp. 833–859.
- [28] S. Barlak, G. Szabó: Sequentially split $*$ -homomorphisms between C^* -algebras. *Internat. J. Math* **27** (2016), no. 12, 48 pp.
- [29] S. Barlak, D. Enders, H. Matui, G. Szabó, W. Winter: The Rokhlin property vs. Rokhlin dimension 1 on unital Kirchberg algebras. *J. Noncommut. Geom.* **9** (2015), no. 4, 1383–1393.
- [30] G. Szabó: A short note on the continuous Rokhlin property and the universal coefficient theorem in E -theory. *Canad. Math. Bull.* **58** (2015), no. 2, 374–380.
- [31] G. Szabó: The Rokhlin dimension of topological \mathbb{Z}^m -actions. *Proc. Lond. Math. Soc.* (3) **110** (2015), no. 3, 673–694.
- [32] G. Szabó: Introduction to C^* -algebras. In: *Model theory of operator algebras, Series Logic and its applications*, DeGruyter, 2023. (Expository)
- [33] A. Sims, G. Szabó, D.P. Williams: Operator algebras and dynamics: groupoids, crossed products, and Rokhlin dimension. *Advanced Courses in Mathematics - CRM Barcelona*, Birkhäuser, 2020. (Expository)

Research visits

02/2020	Copenhagen University, Denmark. (1 week)
09/2019	Fields Institute, Toronto. (1 week)
11/2018	Fields Institute, Toronto. (1 week)
05/2017–06/2017	Texas A&M, USA. (2 weeks)
04/2017–05/2017	PennState, USA. (4 weeks)

- 03/2017 Research program *Operator Algebras: Dynamics and Interactions*. Centre de Recerca Matemàtica, Barcelona. (3 weeks)
- 01/2016-03/2016 Research program *Classification of Operator Algebras: Complexity, Rigidity, and Dynamics*, Mittag-Leffler Institute, Stockholm. (8 weeks)
- 01/2016 University of Kyoto. (2 weeks)
- 03/2015 IMPAN, Warsaw. (3 weeks)
- 02/2014 University of Glasgow. (1 week)

Selected invited talks

- 04/2024 *Classification of C^* -dynamics*. Colloquium talk, IMPAN, Warsaw.
- 11/2023 Mini-course *C^* -algebras, classification and group actions*, Twinned Conference on C^* -Algebras and Tensor Categories, ICMS, Edinburgh. (3 hours)
- 08/2022 *The dynamical Kirchberg–Phillips theorem*, Workshop C^* -algebras, Oberwolfach.
- 06/2021 *The stable uniqueness theorem for equivariant Kasparov theory* (online), Minisymposium Operator Algebras, 8th European Congress of Mathematics.
- 01/2021 Minicourse *Classification of group actions on C^* -algebras* (online), Workshop Actions of Tensor Categories on C^* -algebras, IPAM, UCLA.
- 01-02/2020 *Equivariant property (SI) for C^* -dynamical systems*. Operator Algebra seminar at Copenhagen University and NTNU, Trondheim.
- 09/2019 *The stable uniqueness theorem for equivariant Kasparov theory*, Workshop Topology and Measure in Dynamics and Operator Algebras, BIRS, Banff.
- 08/2019 *The stable uniqueness theorem for equivariant Kasparov theory*, Workshop C^* -Algebras, Oberwolfach.
- 12/2018 *Classification of C^* -algebras and their dynamics*. Colloquium talk, Mathematisches Institut, Universität Göttingen.
- 11/2018 Mini-course *Introduction to C^* -algebras*, Workshop on Model theory and Operator Algebras, BIRS, Banff. (3 hours)
- 11/2018 *The cocycle category and intertwining*. Operator Algebra seminar, Fields institute, Toronto.
- 05/2018 Mini-course *Introduction to the classification of group actions on C^* -algebras*, Sixteenth Annual Spring Institute on Noncommutative Geometry and Operator Algebras, WWU Münster. (3 hours)
- 04/2018 *Multiflows on strongly self-absorbing Kirchberg algebras*, Spring Program on Operator Algebras, ECNU, Shanghai.
- 09/2017 *Approaching the UCT problem via crossed products* (2 talks). Mini-workshop on MASAs and automorphisms of C^* -algebras, Oberwolfach.
- 09/2017 *The classification of Rokhlin flows on C^* -algebras*. Future targets in the classification program for amenable C^* -algebras, BIRS, Banff.

- 07/2017 *An Ornstein–Weiss–Rokhlin lemma for free actions with the small boundary property.* Mean Dimension and Sofic Entropy Meet Dynamical Systems, Geometric Analysis and Information Theory, BIRS, Banff.
- 06/2017 *Rokhlin dimension and topological dynamics.* Workshop on Ergodic Theory and Operator Algebras, Texas A&M.
- 05/2017 *On the classification of Rokhlin flows.* Fifteenth Annual Spring Institute on Noncommutative Geometry and Operator Algebras, Nashville.
- 03/2017 Lecture series *Rokhlin dimension*, CRM, Barcelona. (5 hours)
- 01–02/2017 *On the classification problem for Rokhlin flows.* Delivered at Operator Algebra Seminars in Copenhagen, Odense, Trondheim.
- 11/2016 *Ocneanu-type uniqueness for certain group actions on strongly self-absorbing C^* -algebras.* Workshop on Structure and Classification of C^* -algebras, IMPAN, Warsaw.
- 08/2016 *Equivariant Kirchberg–Phillips-type absorption for amenable group actions.* Workshop C^* -algebras, Oberwolfach.
- 01/2016–06/2016 *Strongly self-absorbing C^* -dynamical systems.* Delivered at: Kyoto Operator Algebra Seminar, RIMS, Kyoto; Mittag-Leffler institute, Stockholm; Operator Algebra Seminar, Leuven.
- 11/2015 *On the nuclear dimension of strongly purely infinite C^* -algebras.* Workshop on Noncommutative Dimension Theories, Honolulu.
- 07/2014 *Finite group actions and the UCT problem.* Workshop on Model Theory and Operator Algebras, Münster.
- 06/2014–10/2014 *Rokhlin dimension for actions of residually finite groups.* Delivered at: Workshop on C^* -Algebras and Dynamical Systems, Fields Institute, Toronto; CSTAR Conference, Glasgow; Dynamics and C^* -Algebras: Amenability and Soficity, BIRS, Banff.
- 03/2013–03/2015 *Rokhlin dimension of topological \mathbb{Z}^m -actions.* Delivered at: Workshop on C^* -Algebras and Noncommutative Dynamics, Sde Boker, Israel; Workshop on the structure and classification of nuclear C^* -algebras, ICMS, Edinburgh; Oberseminar C^* -Algebren, Münster; Theme Week on Noncommutative Geometry and Dynamical Systems, Fields Institute, Toronto; Analysis Seminar, Glasgow; Noncommutative Geometry Seminar and Dynamical Systems Seminar, IMPAN, Warsaw.