

Chrizaldy Neil Manibo

✉ Faculty of Mathematics, Bielefeld University, Universitätsstraße 25, 33615 Bielefeld, Germany
✉ cmanibo@math.uni-bielefeld.de 🌐 www.math.uni-bielefeld.de/~cmanibo

Education

Habilitation (2025)

Habilitation Thesis: *Contributions to Aperiodic Order: Hierarchies, Renormalisation, and Dynamics*
Bielefeld University, Germany

Doctor of Mathematics (2019)

PhD Thesis: *Lyapunov Exponents in the Spectral Theory of Primitive Inflation Systems*
Grade: Summa cum laude
Supervisors: Prof. Dr. Michael Baake and Dr. Franz Gähler
Bielefeld University, Germany

Research interests

Aperiodic Order (spectral theory, dynamical systems, mathematical physics), in particular

- mathematical diffraction theory
- renormalisation theory for tilings
- symbolic dynamics over infinite alphabets
- automatic and regular sequences

Academic positions

- Postdoctoral Research Associate (CRC1283), Bielefeld University since May 2023
- Visiting Postdoctoral Fellow, Center for Mathematical Modelling (CMM)
Santiago, Chile (Fellowship amount: ca. 8000 €) Nov 2023–Jan 2024
- DAAD PRIME Fellow, The Open University, Milton Keynes, UK/
Bielefeld University (Fellowship amount: ca. 130,000 €) Nov 2021–Oct 2022
Nov 2022–Apr 2023
- Postdoctoral Research Associate (CRC1283), Bielefeld University Jul 2019–Oct 2021
- Research Associate, Bielefeld University Nov 2015–Jun 2019
- Instructor, Mathematics Department
Ateneo de Manila University, Philippines Jun 2014–Oct 2015

Teaching experience

- Lecturer, Faculty of Mathematics, Bielefeld University Oct 2023–present
Courses taught: *Mathematical Methods in Classical and Quantum Mechanics, ODEs, Ergodic Theory and Dynamical Systems, Mathematical Methods in the Life Sciences III*
 - Tutor, Faculty of Mathematics, Bielefeld University Nov 2015–Jul 2023
Tutorials held: *PDEs, Discrete Mathematics, Linear Algebra, Probability Theory and Statistics, Complex Analysis, Group and Representation Theory, Fourier Analysis,*
 - Instructor, Mathematics Department, Ateneo de Manila University, Jun 2014–Oct 2015
Philippines (Bachelor)
Courses taught: *Calculus for Business, Modern Mathematics I/II, College Algebra*
-

Peer-reviewed articles

18. N. Mañibo, D. Rust, J.J. Walton, Substitutions on compact alphabets, **Journal of the London Mathematical Society** 111 e70123 (2025) 48 pp.
17. N. Mañibo, Substitutions and their generalisations, **Israel Journal of Chemistry** 64 e202300159 (2024) 15 pp.
16. D. Frettlöh, A. Garber, N. Mañibo, Substitution tilings with transcendental inflation factor, **Discrete Analysis** 11 (2024) 24 pp.
15. M. Baake, N. Mañibo, On the full centraliser of Erdős $\mathcal{B}$ -free shifts, **Colloquium Mathematicum** 176 (2024) 121–134.
14. D. Frettlöh, A. Garber, N. Mañibo, Catalan numbers as discrepancies for a family on substitutions on infinite alphabets, **Indagationes Mathematicae** 35 (2024) 890–913.
13. I. Aedo, U. Grimm, N. Mañibo, Y. Nagai, P. Staynova, Monochromatic arithmetic progressions in automatic sequences with group structure, **Journal of Combinatorial Theory A** 2023 (2024) 105831, 35 pp.
12. Á. Bustos-Gajardo, N. Mañibo, R. Yassawi, Torsion-free S -adic shifts and their spectrum, **Studia Mathematica** 272 (2023) 159–198.
11. N. Mañibo, D. Rust, J.J. Walton, Spectral properties of substitutions on compact alphabets, **Bulletin of the London Mathematical Society** 55 (2023) 2425–2445.
10. Á. Bustos-Gajardo, D. Luz, N. Mañibo, Admissible reversing and extended symmetries for bijective substitutions, **Discrete and Computational Geometry** 69 (2023) 800–833.
9. M. Coons, J. Evans, Z. Groth, N. Mañibo, Zaremba, Salem, and the fractal nature of ghost distributions, **Bulletin of the Australian Mathematical Society** 107 (2023) 374–389.
8. N.P. Frank, N. Mañibo, Spectral theory of spin substitutions, **Discrete and Continuous Dynamical Systems A** 42 (2022) 5399–5435.
7. G.B. Escolano, N. Mañibo, E.D. Miro, Mixing properties and entropy bounds of a family of Pisot random substitutions, **Indagationes Mathematicae** 33 (2022) 965–991.
6. M. Coons, J. Evans, N. Mañibo, Spectral theory of regular sequences, **Documenta Mathematica** 27 (2022) 629–653.
5. N. Mañibo, E.D.P. Miro, D. Rust and G. Tadeo, Zeckendorf representations and mixing properties of sequences, **Tsukuba Journal of Mathematics** 44 (2020) 251–269.
4. M. Baake, M. Coons, N. Mañibo, Binary substitutions of constant length and Mahler measures of Borwein polynomials, in *From Analysis to Visualization*, B. Sims et al. (eds.), Springer, Cham (2020) pp. 303–322.
3. M. Baake, F. Gähler, N. Mañibo, Renormalisation for pair correlation measures for primitive inflation rules and absence of absolutely continuous diffraction, **Communications in Mathematical Physics** 370 (2019) 591–635.
2. M. Baake, U. Grimm, N. Mañibo, Spectral analysis of a family of binary inflation rules, **Letters in Mathematical Physics** 108 (2018) 1783–1805.
1. N. Mañibo, Lyapunov exponents for binary substitutions of constant length, **Journal of Mathematical Physics** 58 (2017) 113504, 9 pp.

Preprints

2. Á. Bustos-Gajardo, D. Luz, N. Mañibo, Radius-zero extended symmetries and irregular fibres of $\mathbb{Z}^d$ -substitution subshifts, [arXiv:2506.13392](https://arxiv.org/abs/2506.13392).
 1. M. Coons, J. Evans, P. Gohlke, N. Mañibo, Spectral theory of regular sequences: parametrisation and spectral characterisation, [arXiv:2307.15185](https://arxiv.org/abs/2307.15185), *Isr. J. Math.*, under revision.
-

Selected invited conference talks

- *Aspects of Aperiodic Order*, Mathematisches Forschungsinstitut Oberwolfach, Germany 27 Aug–1 Sep 2023
- *15th International Conference on Quasicrystals*, Tel Aviv University, Tel Aviv, Israel 19–24 Jun 2023
- *Almost Periodicity in Aperiodic Order*, Banff International Research Station, Canada 9–11 Sep 2022
- *25th Congress of the International Union of Crystallography*, Prague, Czechia 14–22 Aug 2021
- *Aperiodic Order meets Number Theory*, MATRIX Centre, Creswick, Victoria, Australia 25 Feb–1 Mar 2019
- *Spectral Structures and Topological Methods in Mathematical Quasicrystals*, Mathematisches Forschungsinstitut Oberwolfach, Germany 1–7 Oct 2017

Seminars and colloquia given

Germany (5), UK (3), Canada (2), Chile (2), USA (2), Australia (1), Belgium (1), Mexico (1), Philippines (1).

Distinctions

- International Union of Crystallography (IUCr) Award for Young Scientists, 15th International Conference on Quasicrystals, Tel Aviv, Israel Jun 2023
- 2019 Best PhD Thesis for the Faculty of Mathematics, Bielefeld University
Prize: 1,000 € Jan 2020

Thesis co-supervision

2 PhD students (UK, Germany) and one MSc student (Philippines)

Conference organisation

- Conference co-organiser (with D. Damanik, N.P. Frank, N. Strungaru, und R. Yassawi), *Directions in Aperiodic Order*, Banff International Research Station (BIRS), Banff, Canada 27 Jul–1 Aug 2025
- Member, International Advisory Board, *16th International Conference on Quasicrystals*, Nancy, France 22–27 Jun 2025
- Workshop co-organiser (with D. Damanik und N. Strungaru), *Algebra, Analysis, and Aperiodic Order*, Bielefeld 12–16 Aug 2024

Refereeing

Reviewer for: *Ergodic Theory and Dynamical Systems* (3), *Discrete and Continuous Dynamical Systems*, *Journal of Functional Analysis*, *Proceedings of the American Mathematical Society*, *Israel Journal of Mathematics*, *Houston Journal of Mathematics*, *Combinatorics and Number Theory*, *Journal of the Australian Mathematical Society*, *Discrete and Computational Geometry*, *Indagationes Mathematicae*, *Monatshefte für Mathematik*, *Acta Crystallographica*, *Nonlinearity*.