Eva-Maria Hekkelman

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Education

2021 – · · · ·	Ph.D. Mathematics, UNSW Sydney , Australia. Primary supervisor Fedor Sukochev, co- supervisors Edward McDonald and Dmitriy Zanin. Thesis: <i>Trace Formulas in Noncommutative Geometry</i> .
2018 – 2021	M.Sc. Mathematical Physics (cum laude), Radboud University Nijmegen , The Netherlands. Thesis: <i>Truncated Geometry on the Circle</i> , supervised by Walter van Suijlekom.
2015 - 2018	B.Sc. Mathematics (cum laude), Radboud University Nijmegen , The Netherlands. Thesis: <i>Properties of the Lattice</i> $\mathcal{O}(\Sigma_A)$ <i>Concerning Intuitionistic Quantum Logic</i> , in collaboration with Quinten Rutgers, supervised by Klaas Landsman.
	B.Sc. Physics and Astronomy (cum laude), Radboud University Nijmegen , The Netherlands. Thesis: as above.

Working Experience

Starting Sept. 2025	Postdoctoral Fellow, Max Planck Institute for Mathematics (MPIM) Bonn, Germany. Local mentor Matthias Lesch. Two-year appointment.
2023 - 2025	 Teaching Assistant, UNSW Sydney, Australia. Courses: Mathematics 1A (linear algebra and calculus); Higher Mathematics 1A; Mathematics 1B (linear algebra and calculus, sequel of Mathematics 1A); Discrete Mathematics (set theory, logic, and combinatorics); Several Variable Calculus; Higher Several Variable Calculus.
2022 – 2023	 Research Assistant, UNSW Sydney, Australia. Assisted in typesetting and editing: S. Lord, E. McDonald, F. Sukochev, and D. Zanin. Singular traces. Vol. 2. Trace Formulas. Vol. 46/2. De Gruyter Studies in Mathematics. Second edition. De Gruyter, Berlin, 2023, pp. xl+471. P. G. Dodds, B. de Pagter, and F. A. Sukochev. Noncommutative integration and operator theory. Vol. 349. Progress in Mathematics. Birkhäuser/Springer, Cham, 2023, pp. xi+577.
2017 – 2021	 Teaching Assistant, Radboud University Nijmegen, The Netherlands. Courses: Operator Algebras (MSc level course); Partial Differential Equations; Topology; Rings and Fields; Curves and Surfaces; Mathematical Models of Population Dynamics.

Research Publications

Preprints



2

E.-M. Hekkelman, E. A. McDonald, and T. D. van Nuland, "Multiple operator integrals, pseudodifferential calculus, and asymptotic expansions," arXiv:2404.16338, 2024. *O* DOI: 10.48550/arXiv.2404.16338.

E.-M. Hekkelman and E. A. McDonald, "A noncommutative integral on spectrally truncated spectral triples, and a link with quantum ergodicity," arXiv:2412.00628, 2024. *O* DOI: 10.48550/arXiv.2412.00628.

Journal Articles

1

3

E.-M. Hekkelman and E. A. McDonald, "A general Dixmier trace formula for the density of states on open manifolds," *SIGMA Symmetry Integrability Geom. Methods Appl.*, vol. 20, Paper No. 007, 34, 2024, ISSN: 1815-0659. *P* DOI: 10.3842/SIGMA.2024.007.

N. Azamov, E.-M. Hekkelman, E. A. McDonald, F. A. Sukochev, and D. Zanin, "An application of singular traces to crystals and percolation," *J. Geom. Phys.*, vol. 179, Paper No. 104608, 22, 2022, ISSN: 0393-0440,1879-1662. O DOI: 10.1016/j.geomphys.2022.104608.

E.-M. Hekkelman, "Truncated geometry on the circle," *Lett. Math. Phys.*, vol. 112, no. 2, Paper No. 20, 19, 2022, ISSN: 0377-9017,1573-0530. *9* DOI: 10.1007/s11005-022-01514-5.

Miscellaneous Experience

Awards and Achievements

2024		Visiting Scholar at Penn State University , invited by professor Nigel Higson. One- month research visit at Penn State University, USA in October 2024.
		AustMS WIMSIG Cheryl E. Praeger Travel Award , awarded AU\$3,000 by the Australian Mathematical Society towards funding the above trip to Penn State University.
2022		Outstanding Pure Mathematics Talk , at the 2022 Postgraduate Conference of the School of Mathematics and Statistics at UNSW Sydney.
2021		Award ('pluim') for excellent teaching . Awarded by the student body 'OLC Wiskunde' at Radboud University, on basis of outstanding student evaluations of the course Partial Differential Equations.
2020		Month-long tour with the Dutch National Student Orchestra , concerts in the Nether- lands, Luxembourg and Aachen.
2019		Cultural Top Talent, awarded by Radboud University.
		Month-long tour with the Dutch National Student Orchestra , concerts in the Nether- lands, Berlin and Leuven.
2017		Month-long tour with the Dutch National Student Orchestra , concerts in the Nether- lands and London.
2016 – 2018		Radboud Honours Academy . Program consisted of writing a research proposal in an interdisciplinary group and writing a BSc thesis for double the usual credits. Visited Dr. Bert Lindenhovius at Tulane University, USA.
Selected talk	ĸs	
2024		Invited speaker for the INdAM Workshop on Noncommutative Geometry and Applications , Cortona, Italy, 28th June - 4th July 2024.
		Quantum Washing Crown Seminar at University of Illinois Urbana Champaign

Quantum Working Group Seminar at **University of Illinois Urbana-Champaign**, USA.

Miscellaneous Experience (continued)

