

Christiaan van de Ven

Curriculum Vitae et Studiorum (May 2023)

Personal information

Name	Christiaan Jozef Farielda
Surname	van de Ven
Date and place of birth	17 March 1991, Venlo (The Netherlands)
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Current position

06/2022 – Today **Postdoc**, *Post-doctoral position at Institut für Mathematik, University of Würzburg, Germany.*
This position is funded by the Alexander von Humboldt Foundation.

Education and training

- 01/12/2021 – 30/04/2022 **Postdoc**, Post-doctoral researcher, *Max Planck Planck Institute for Mathematics in the Sciences, Leipzig (Germany).*
- 01/11/2018 – 14/12/2021 **PhD**, cycle XXXIV, Mathematics, *University of Trento, Trento (Italy)*
My PhD was part of the European project INdAM-DP-Cofund-2015 'INdAM Doctoral Programme in Mathematics and/or Application Cofunded by Marie Skłodowska-Curie Actions' (see below).
PhD Thesis Title: *Quantum Systems and their Classical Limit, a C^* -Algebraic Approach.*
Supervisor: Prof. Valter Moretti.
Judicium: *cum laude*
- 31/05/2018 **Master of Science**, Mathematics, *Radboud University Nijmegen, Nijmegen (The Netherlands)*
MSc Thesis Title: *Properties of quantum spin systems and their classical limit, from the quantum Curie-Weiss model to the double well potential* (click here).
Supervisor: Prof. Klaas Landsman.
Judicium: *cum laude*
- 20/04/2015 **Pre-master**, Mathematical Physics, *Radboud University Nijmegen, Nijmegen (The Netherlands)*
Remark: the pre-master program lasted approximately two years as an extension of the BSc program.
- 20/04/2015 **Bachelor of Science**, Chemistry, *Radboud University Nijmegen, Nijmegen (The Netherlands)*
BSc Thesis Title: *Eutectic melting in binary mixtures and polymorphism.*
Supervisor: Dr. Hugo Meekes.
Judicium: *cum laude*
- 04/2015 – 06/2015 **Internship**, Erasmus internship in Mathematics, *University of Cagliari, Cagliari (Italy)*
- 31/08/2011 **Propedeuse**, Molecular Life Sciences, *Radboud University Nijmegen, Nijmegen (The Netherlands)*
Judicium: *cum laude*
- 30/06/2010 **Gymnasium**, Profile: Nature and Health, Nature and Technology, *Valuascollege Venlo, Venlo (The Netherlands)*

Grants

- 11/2021 **Alexander von Humboldt Fellowship**, Alexander von Humboldt fellowship for postdoctoral researchers awarded by the *Alexander von Humboldt Foundation*, see (click here)
- 09/2018 **PhD Scholarship**, Marie Skłodowska-Curie Fellowship awarded by the *Istituto Nazionale di Alta Matematica (INdAM)*, Grant number: 800 713485, see (click here)
- 07/2018 **Assegno di ricerca**, Scholarship for PhD in Mathematics at the University of Trento, cofunded by the national project *Dipartimenti di Eccellenza*, see (click here) and also (click here)
I have declined this scholarship due to the grant INdAM I obtained soon after.

Publications and preprints

1. N. Drago, C.J.F. van de Ven,
DLR-KMS correspondence on lattice spin systems
Submission: *Lett. Math. Phys.* 113, 88 (2023)
2. C.J.F. van de Ven,
KMS states and their classical limit
Preprint, *arXiv:2211.01755* (2022).
3. N. Drago, C.J.F. van de Ven,
Strict deformation quantization and local spin interactions
Preprint, *arXiv:2210.10697* (2022).
4. C.J.F. van de Ven,
Emergent phenomena in Nature: a paradox with Theory?
Accepted for publication in *Found. Phys.*: *arXiv:2209.10488* (2022).
5. C.J.F. van de Ven,
The classical limit and spontaneous symmetry breaking in algebraic quantum theory.
Submission: *Expo. Math. Vol. 40, Iss. 3* (2022).

6. V. Moretti, C.J.F. van de Ven,
The classical limit of Schrödinger operators in the framework of Berezin quantization and spontaneous symmetry breaking as emergent phenomenon.
Submission: *Int. J. Geom. Methods Mod. Phys.* Vol. 19, Iss. 01 (2022).
7. S. Murro, C.J.F. van de Ven,
Injective tensor products in strict deformation quantization.
Submission: *Math. Phys. Anal. Geom.* Vol. 25, Iss. 2 (2022).
8. C.J.F. van de Ven,
The classical limit of mean-field quantum spin systems.
Submission: *J. Math. Phys.* Vol. 61, Iss. 12 (2020).
9. V. Moretti, C.J.F. van de Ven,
Bulk-boundary asymptotic equivalence of two strict deformation quantizations.
Submission: *Letters. Math. Phys.* Vol. 110, Iss. 11 (2020).
10. K. Landsman, V. Moretti, C.J.F. van de Ven,
Strict deformation quantization of the state space of $M_k(\mathbb{C})$ with applications to the Curie-Weiss model.
Submission: *Rev. Math. Phys.* Vol. 32, Iss.10 (2020).
11. C. J. F. van de Ven, G. C. Groenenboom, R. Reuvers, N. P. Landsman,
Quantum spin systems versus Schrödinger operators: A case study in spontaneous symmetry breaking.
Submission: *SciPost* Vol. 8, Iss. 2 (2020).

Participation in external national/international scientific events

- 24/07/2023 – 28/07/2023 Conference *Interfaces Between Quantum and Classical Statistical Mechanics*, São Paulo (Brazil). I was an invited speaker. Title of my talk: *The commutative resolvent algebra: an approach to dynamical classical lattice systems.* (click here)
- 26/06/2023 – 30/06/2023 Hausdorff School *Recent Advances in Quantum and Statistical Mechanics*, Bonn (Germany). (click here)
- 13/03/2023 – 17/03/2023 Conference *Quantum many body systems and quantum information*, Madrid (Spain). (click here)
- 12/09/2022 – 15/09/2022 Workshop *Math in the Mill 2022*, Sondheim vor der Rhön (Germany). I was a contributed speaker. Title of my talk: *Symmetry breaking in Nature versus Theory.* (click here)
- 24/06/2022 – 25/06/2022 LQP Workshop *46rd Foundations and Constructive aspects of QFT*, Erlangen (Germany). I was a contributed speaker. Title of my talk: *A C^* -algebraic approach to the classical limit of quantum systems.* (click here)
- 21/03/2022 – 25/03/2022 Online Conference *virtual DPG Spring Meeting*, Heidelberg (Germany). I was a contributed speaker. Title of my talk: *A C^* -algebraic approach to the classical limit of quantum systems.* (click here)
- 02/08/2021 – 06/08/2021 Summer School *GEOQUANT 2021- 'Geometry & Quantization - Deformation quantization and convergence'*, Freiburg (Germany). (click here)
- 22/03/2021 – 26/03/2021 Online Conference *Gran Sasso Quantum Meetings @GSSI: From Equilibrium Phenomena Towards Open Quantum Systems*, L'Aquila (Italy). I was a contributed speaker. Title of my talk: *Strict deformation quantization: a C^* -algebraic approach to the classical limit of quantum systems.* (click here)
- 31/08/2020 – 09/09/2020 Summer School *XLV Summer School on Mathematical Physics*, Ravello (Italy). I was a contributed speaker. Title of my talk: *On strict deformation quantization of Poisson manifolds with applications to the classical limit and SSB.* (click here)
- 19/06/2020, 22/06/2020 Online Summer School *Applications of Bogoliubov Theory, Mathematical Physics of Quantum Many-Body Systems*, Milan (Italy). (click here)
- 17/12/2019 – 20/12/2019 Conference *From semi-classical to quantum many body through normal forms*, Milan (Italy). (click here)
- 08/11/2019 Conference *First Math Young Researchers Meeting*, Genova (Italy). I was an invited speaker. Title of my talk: *Properties of quantum spin systems and their classical limit with emphasis to SBB.* (click here)
- 24/07/2019 – 26/07/2019 Conference *Trieste Junior Quantum Days*, Trieste (Italy). I was a contributed speaker. Title of my talk: *Properties of Quantum Spin Systems and their Classical Limit.* (click here)
- 22/04/2019 – 26/04/2019 Spring School *From Quantum to Classical*, Marseille (France). (click here)
- 20/02/2019 – 22/02/2019 LQP Workshop *43rd Foundations and Constructive aspects of QFT*, Florence (Italy). (click here)

Visits

- 04/07/2023 - 06/07/2023 *Universität zu Köln*, Köln (Germany). Visit to prof. Marinescu
- 25/04/2023 - 26/04/2023 *Technische Universität München*, München (Germany). Visit to prof. Warzel
- 05/12/2022 - 09/12/2022 *School of Mathematics*, Cardiff (Wales). Visit to Dr. Naaikjens
- 21/11/2022 - 23/11/2022 *L'Université de Genève*, Genève (Switzerland). Visit to prof. Dr. Velenik
- 11/02/2020–14/02/2020 *Scuola Normale Superiore di Pisa*, Pisa (Italy) .Visit to prof. Michele Correggi

- 11/11/2019 *Università di Genova*, Genova (Italy). Visit to prof. Nicola Pinamonti
- 23/06/2019–25/06/2019 *University of Leipzig* and the *Max Planck Institute*, Leipzig (Germany)
- 14/06/2019 *University of Messina*, Messina (Italy). Visit to prof. Francesco Oliveri
- 03-06-2019 *Politecnico di Bari*, Bari (Italy). Indam Day 2019
- 2019 *Radboud University Nijmegen*, Nijmegen (The Netherlands). Visit to prof. Klaas Landsman
- 2017 *Sissa*, Trieste (Italy). Visit to prof. Alessandro Michelangeli as a part of my MSc

Webinars

- 06/05/2021 *Strict deformation quantization: a C^* -algebraic approach to the classical limit of quantum systems*. In the group of prof. Marcin Napiórkowski, *University of Warsaw*, Warsaw (Poland).
- 26/02/2021 *Asymptotic equivalence of two strict deformation quantizations and applications to the classical limit*. In the group of prof. Stephan Waldmann, *University of Würzburg*, Würzburg (Germany).
- 17/02/2021 *Strict deformation quantization: a C^* -algebraic approach to the classical limit of quantum systems*. In the group of prof. Jan Philip Solovej, *University of Copenhagen*, Copenhagen (Denmark).
- 04/02/2021 *Asymptotic equivalence of two strict deformation quantizations and applications to the classical limit*. In the group of prof. Felix Finster, *University of Regensburg*, Regensburg (Germany).
- 17/12/2020 *Asymptotic equivalence of two strict deformation quantizations and applications to the classical limit*. In the group of prof. Gianluca Panati, '*La Sapienza*', *University of Rome*, Rome (Italy).
- 26/11/2020 *Asymptotic equivalence of two strict deformation quantizations and applications to the classical limit*. (Click here) 'Doc in Progress', *University of Trento*, Trento (Italy).
- 03/11/2020 *Asymptotic equivalence of two strict deformation quantizations and applications to the classical limit*. (Click here) International group of non-commutative geometry (NCG). Invited by prof. Walter van Suijlekom (*Radboud University Nijmegen*) and prof. Giovanni Landi (*University of Trieste*).

Referee and related activities

- Reviewer for *Annals of Physics*.
- Reviewer for *Journal of Mathematical Physics*.
- Member of Examination Board of Ph.D. candidate Lucas Affonso

PhD Courses

- 19/10/2020–12/11/2020 *The Geometry of Quantum Algorithms*, lecturer Prof. Frederic Holweck, *University of Trento*, Trento (Italy).
- 02/2019–07/2019 *Topics in the Mathematical Physics of Quantum Theories*, lecturer Prof. Romeo Brunetti, *University of Trento*, Trento (Italy).
- 02/2019–05/2019 *Introduction to Entanglement and Quantum Information*, lecturer Prof. Sonia Mazzucchi, *University of Trento*, Trento (Italy).
- 11/2018–02/2019 *Geometric Analysis*, lecturer Prof. Lorenzo Mazzieri, *University of Trento*, Trento (Italy).

Other employments

- 05/2020 **Translator**, Confidential translator (Dutch–Italian) for the Guardia di Finanza (Italian law enforcement agency under the authority of the Minister of Economy and Finance)
- 2011– 2018 **Teaching assistant**, Teaching assistant/tutor in courses in the curricula of Mathematics, Physics, Chemistry and Life Sciences, *Radboud University Nijmegen*, Nijmegen (The Netherlands)
- 04/2015 – 06/2015 **Teaching assistant**, Teacher assistant in Physics, *University of Cagliari*, Cagliari (Italy)
- 2010 – 2014 **Tutor**, Tutor in classical languages and exact/beta courses, *Valuascollegge Venlo*, Venlo (The Netherlands)
- 2003 – 06/2010 **Side jobs**, Several side jobs, 5-10 hours per week: restaurant employee, postal service

Language skills

- Dutch Mother tongue
- Italian Native, C2 (speaking, writing, listening, reading)
- English Near native, C1 (speaking, writing, listening, reading Cambridge certificated)
- German Excellent command, C1 (speaking, listening, reading)
- French Good command, B1 (listening, reading)

Digital skills

2015 **Programming in C**, Course 'Programming 1', *Radboud University Nijmegen*, Nijmegen (The Netherlands)

2012 **Matlab**, Course 'Programming in MATLAB', *Radboud University Nijmegen*, Nijmegen (The Netherlands)

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Microsoft Office

References

Stefan Waldmann Professor of Mathematical Physics at *University of Würzburg*. Address: Emil-Fischer-Straße 31, Würzburg (Germany). Email: stefan.waldmann@mathematik.uni-wuerzburg.de

Valter Moretti Professor of Mathematical Physics at *University of Trento*. Address: Via Sommarive 14, Povo (Trento, Italy). Email: valter.moretti@unitn.it

Klaas Landsman Professor of Mathematical Physics at *Radboud University Nijmegen*. Address: Heyendaalseweg 135, Nijmegen (The Netherlands). Email: landsman@math.ru.nl