

Hans HÖNGESBERG

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University of Ljubljana | Faculty of Mathematics and Physics | Jadranska 21, 1000 Ljubljana, Slovenia

ACADEMIC POSITIONS

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|--------------|---|
| from 05/2024 | Postdoctoral research fellow , University of Ljubljana, Slovenia |
| 2023 – 2024 | Assistant professor , Institute of Mathematics of the Polish Academy of Sciences (IMPAN) in Kraków, Poland |
| 2021 – 2023 | Postdoctoral research fellow , University of Vienna, Austria |
| 2017 – 2021 | Predocctoral research fellow , University of Vienna, Austria |
| 2017 | Undergraduate research assistant , University of Vienna, Austria |
| 2012 – 2013 | Student assistant , Julius-Maximilians-University of Würzburg, Germany |

RESEARCH INTERESTS

My research lies within enumerative and algebraic combinatorics. I am specially interested in alternating sign matrices and related objects such as integer and plane partitions, Young tableaux, lozenge tilings as well as symmetric functions.

HIGHER EDUCATION

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| JUN 2021 | PhD (Dr. rer. nat.) in MATHEMATICS
University of Vienna, Austria
Thesis: <i>The Monotone Triangle Perspective on Alternating Sign Arrays</i>
Advisor: Ilse FISCHER <i>passed with distinction</i> |
| JUN 2017 | Master of Science (M.Sc.) in MATHEMATICS
University of Vienna, Austria
Thesis: <i>Refined Enumeration Formulae Related to Halved Monotone Triangles</i>
Advisor: Ilse FISCHER <i>passed with distinction</i> |
| SEP 2013 | Bachelor of Arts (B.A.) in PHILOSOPHY AND MATHEMATICS
Julius-Maximilians-University of Würzburg, Germany
Thesis: <i>Der Wahrheitsbegriff axiomatischer Sätze aus Sicht kritischer und formalistischer Theorie (The Concept of Truth of Axiomatic Sentences in Critical Philosophy and Hilbertian Formalism)</i>
Advisor: Karl-Heinz LEMBECK <i>passed with distinction</i> |
| JUL 2013 | Bachelor of Science (B.Sc.) in MATHEMATICS
Julius-Maximilians-University of Würzburg, Germany
Thesis: <i>Kettenbruchentwicklung in algebraischen Zahlkörpern (Continued Fraction Expansion in Algebraic Number Fields)</i>
Advisor: Jörn STEUDING <i>final grade: very good</i> |

SCHOLARSHIPS AND GRANTS

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| 05/2024 – 4/2027 | Erwin Schrödinger Fellowship
Austrian Science Fund (FWF), project J 4810
<i>Alternating Sign Arrays: Symmetry & Symmetric Functions</i>
Grant Size: 183,430 € |
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SCIENTIFIC ACTIVITIES

JOURNAL PAPERS

3. H. HÖNGESBERG, A fourfold refined enumeration of alternating sign trapezoids, *The Electronic Journal of Combinatorics* **29** (3), P3.42 (2022). DOI: [10.37236/9933](https://doi.org/10.37236/9933).
2. H. HÖNGESBERG, Weight-preserving bijections between integer partitions and a class of alternating sign trapezoids, *Annals of Combinatorics* **26**, 673–699 (2022). DOI: [10.1007/s00026-022-00588-1](https://doi.org/10.1007/s00026-022-00588-1).
1. H. HÖNGESBERG, Refined enumeration of halved monotone triangles and applications to vertically symmetric alternating sign trapezoids, *Journal of Combinatorial Theory, Series A* **177**, 105336 (2021). DOI: [10.1016/j.jcta.2020.105336](https://doi.org/10.1016/j.jcta.2020.105336).

CONFERENCE PROCEEDINGS

4. I. FISCHER, H. HÖNGESBERG, F. SCHREIER-AIGNER, Alternating sign matrices and descending plane partitions: a linear number of equivalent statistics, *Proceedings of the 35th Conference on Formal Power Series and Algebraic Combinatorics (Davis), Séminaire Lotharingien de Combinatoire* **89B.69** (2023). [Extended Abstract](#).
3. H. HÖNGESBERG, Weight-preserving bijections between integer partitions and a family of alternating sign trapezoids, *Proceedings of the 33rd Conference on Formal Power Series and Algebraic Combinatorics (Ramat Gan), Séminaire Lotharingien de Combinatoire* **85B.80** (2021). [Extended Abstract](#).
2. H. HÖNGESBERG, On a fourfold refined enumeration of alternating sign trapezoids, *Proceedings of the 32nd Conference on Formal Power Series and Algebraic Combinatorics (Online), Séminaire Lotharingien de Combinatoire* **84B.76** (2020). [Extended Abstract](#).
1. H. HÖNGESBERG, N. OSWALD, J. STEUDING, Complex continued fractions with constraints on their partial quotients, *Voronoi's Impact on Modern Science* **5(1): Proceedings of the 5th International Conference on Analytic Number Theory and Spatial Tessellations**, 1–14 (2013).

PREPRINTS

2. S. ALBION, I. FISCHER, H. HÖNGESBERG, F. SCHREIER-AIGNER, Skew symplectic and orthogonal characters through lattice paths. arXiv: [2305.11730](https://arxiv.org/abs/2305.11730) [[math.CO](#)].
1. I. FISCHER, H. HÖNGESBERG, Alternating sign matrices with reflective symmetry and plane partitions: $n + 3$ pairs of equivalent statistics. arXiv: [2207.04469](https://arxiv.org/abs/2207.04469) [[math.CO](#)].

POSTERS

6. 35th Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2023), Davis (California, USA), 07/2023.
5. [AlCoVE: an Algebraic Combinatorics Virtual Expedition](#), Online, 06/2023.
4. 89th Séminaire Lotharingien de Combinatoire and Brenti Fest (89th SLC), Bertinoro (Italy), 03/2023.
3. 33rd Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2021), Ramat Gan (Israel), 01/2022. [Poster](#).
2. [Lattice Paths, Combinatorics and Interactions](#), CIRM, Marseille (France), 06/2021. [Poster](#).
1. 32nd Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2020), Online, 07/2020.

SELECTED TALKS & WORKSHOPS

11. Core participant of the long program *Geometry, Statistical Mechanics, and Integrability* at the Institute for Pure & Applied Mathematics (IPAM) at UCLA, Los Angeles (California, USA), 04–05/2024.
10. Speaker at the [EAUMP-ICTP School on Enumerative Combinatorics](#), Arusha (Tanzania), 07/2023.
9. 2nd Queer and Trans Mathematicians in Combinatorics, [QTMC 2023](#), London (UK), 07/2023.
8. [Arbeitsgemeinschaft Diskrete Mathematik](#), TU Wien (Austria), 05/2023.

7. [Algorithmic and Enumerative Combinatorics conference](#), Vienna (Austria), 07/2022. [Abstract](#). [Slides](#).
6. Séminaire virtuel de combinatoire du LaCIM, Montréal (Canada), 12/2020.
5. [Arbeitsgemeinschaft Diskrete Mathematik](#), TU Wien (Austria), 12/2020.
4. 83rd Séminaire Lotharingien de Combinatoire, Bad Boll (Germany), 09/2019. [Slides](#).
3. SFB F50 Seminar, RICAM, Universität Linz (Austria), 06/2019.
2. [Arbeitsgemeinschaft Diskrete Mathematik](#), TU Wien (Austria), 10/2018.
1. Workshop *Enumerative Combinatorics*, Mathematisches Forschungsinstitut Oberwolfach (Germany), 05/2018. [Report](#).

REVIEWS

Referee for *Ars Mathematica Contemporanea*, *Discrete Mathematics*, *Electronic Journal of Combinatorics*, *Monatshefte für Mathematik*.

TEACHING EXPERIENCE

SUPERVISION

2023	Alexander Kargl (Bachelor student), <i>Stanley's shuffling theorem</i>
2022	Helene Leitner (Bachelor student), <i>Completion of Latin squares</i>

CLASSES

2022	Assistance in preparing a new lecture series with exercise classes <i>Discrete Mathematics and Computer Science</i>
2021	<i>Combinatorics</i> , Exercise Classes
2020	<i>Discrete Mathematics</i> , Exercise Classes
2018	<i>Linear Algebra for Physicists</i> , Exercise Classes
2019	

PROFESSIONAL ACTIVITIES

Organiser	Combinatorics Working Seminar, University of Vienna, 2019
Substitute Member	Fakultätskonferenz Mathematik, University of Vienna, since 2020
Member	Studienkonferenz Doktoratsstudium Naturwissenschaften, University of Vienna, 2018