

Alexander GLAZMAN

Curriculum Vitæ

Main areas of research

Probability theory and mathematical physics, in particular: phase transition, Ising/percolation-type models, invariance principle, random surfaces, wetting, Gibbs measures, positive correlation inequality.

Academic degrees

- 2022 **Habilitation**, *University of Vienna, Austria*
“Phase transitions in two-dimensional lattice models”
- 2016 **Ph.D**, *University of Geneva, Switzerland*
“Properties of self-avoiding walks and a stress tensor in the $O(n)$ model”. Adv: Stanislav Smirnov
- 2015 **Cand. Sci. Phys. Mat.**, *St Petersburg Department of Steklov Institute, Russia*
“Generalized flowers in k -connected graphs”. Adv: Dmitry Karpov.
- 2011 **Diploma of Mathematician**, *St Petersburg State University, Russia*

Academic employment

- 2022–curent **Assistant Professor**, *University of Innsbruck*
- 2020–22 **Postdoc**, *University of Vienna*
- 2019–20 **Postdoc**, *University of Fribourg*
- 2016–19 **Postdoc**, *Tel Aviv University*
- 01–08/2012 **Researcher**, *Chebyshev Laboratory, St. Petersburg*

Projects

- 2021–25 **PI**, *Order–disorder phase transition in 2D lattice models*, Austrian Science fund, €399,577, University of Vienna, Austria
- 2018–20 **PI**, *Combinatorial approach to critical 2D lattice models*, Swiss National Science Foundation, CHF 123,307, Tel Aviv University, Israel and University of Fribourg, Switzerland
- 2016–18 **PI**, *Observables in lattice models*, Swiss National Science Foundation, CHF 67,200, Tel Aviv University, Israel

Supervision and mentorship:

- 2023–current **David Beck-Tiefenbach**, *PhD student*
- 2022–current **Lucas Rey**, *PhD student*
Co-advisor with Béatrice de Tilière (University Paris Dauphine) and Marcin Lis (TU Vienna)
- 2022–current **Maran Mohanarangan**, *PhD student*
Cotutelle with Ioan Manolescu (University of Fribourg)
- 2021–current **Moritz Dober**, *PhD student*
- 2021–22 **Kieran Ryan**, *Postdoc*

Conference talks and colloquia:

- 2024 **ETH Zurich**, *FKG in height and colouring models*
- 2023–24 **Helsinki and Les Diablerets (CH)**, *Potts model at T_c : continuity vs wetting*
- 2023 **Paris and Berlin**, *Delocalisation of height functions*
- 2022 **Theory Colloquium (Physics) in Innsbruck**, *Phase transition in 2D statistical mechanics*
- 2022 **AMS–EMS–SMF meeting in Grenoble**, *Random-cluster and Ashkin-Teller models*
- 2019 **Banff, Fribourg and Les Diablerets (CH)**, *Six-vertex and Ashkin-Teller models: order/disorder phase transition*
- 2017–18 **Oberwolfach, IMPA (Rio), Weizmann institute**, *Phase transition in the loop $O(n)$ model*
- 2015 **SPA in Oxford, Bath, Les Diablerets**, *Discrete stress tensor in the $O(n)$ model*
- 2013 **Stony Brook (USA)**, *Connective constant for a weighted self-avoiding walk on \mathbb{Z}^2*
- 2011 **St. Petersburg**, *Generalized flowers in k -connected graphs*

Seminar talks:

AUT: University of Vienna and TU Vienna; **CH**: University of Geneva and EPFL; **DEN**: University of Copenhagen; **FRA**: IHES, Paris; **FIN**: University of Helsinki; **GER**: TU Darmstadt; **ISR**: Tel Aviv University, Bar-Ilan University, Technion, and Weizmann Institute; **POL**: IMPAN, Warsaw; **RUS**: PDMI Steklov, Chebyshev Lab at SPbSU, Ural Federal University; **SWE**: Lund University;

Institutional responsibilities

- 2022–current **Probability seminar**, *University of Innsbruck*
- 2015–16 **Seminar in Probability and Mathematical Physics**, *University of Geneva*
- 2014–16 **Reading group for junior researchers**, *University of Geneva*

Publications/Preprints

Link to all published publications: <https://www.uibk.ac.at/mathematik/personal/glazman/>

1. A. Glazman, P. Lammers, Delocalisation and Continuity in 2D: Loop $O(2)$, Six-Vertex, and Random-Cluster Models (2023), arXiv:2306.01527
2. Y. Aoun, M. Dober, A. Glazman, Phase diagram of the Ashkin-Teller model, *Communications in Mathematical Physics (CMP)*, Vol. 405 (2024), doi:10.1007/s00220-023-04925-0
3. A. Glazman, I. Manolescu, Structure of Gibbs measures of planar FK-percolation and Potts model, *Probability and Mathematical Physics (PMP)*, Vol. 4 (2023), doi:10.2140/pmp.2023.4.209
4. with N. Crawford, A. Glazman, M. Harel, R. Peled, Macroscopic loops in the loop $O(n)$ model via the XOR trick (2020), arXiv:2001.11977
5. A. Glazman, R. Peled, On the transition between the disordered and antiferroelectric phases of the 6-vertex model *Electronic Journal of Probability (EJP)* (2023), doi:10.1214/23-EJP980
6. A. Glazman, I. Manolescu, Exponential decay in the loop $O(n)$ model: $n > 1, x < \frac{1}{\sqrt{3}} + \varepsilon(n)$. *In and Out of Equilibrium 3: Celebrating Vladas Sidoravicius*, (2021), doi:10.1007/978-3-030-60754-8_21
7. A. Glazman, I. Manolescu, Uniform Lipschitz functions on the triangular lattice have logarithmic variations. *Comm. Math. Phys. (CMP)*, 381 (2021), doi:10.1007/s00220-020-03920-z
8. A. Glazman, I. Manolescu, Self-avoiding walk on \mathbb{Z}^2 with Yang–Baxter weights: universality of critical fugacity and 2-point function. *Ann. Ins. Henri Poincaré (AIHP)*, 56 (2020), doi:10.1214/19-AIHP1024
9. H. Duminil-Copin, A. Glazman, R. Peled and Y. Spinka, Macroscopic loops in the loop $O(n)$ model at Nienhuis' critical point, *J. Eur. Math. Soc. (JEMS)*, 23 (2021), doi:10.4171/JEMS/1012
10. D. Chelkak, A. Glazman, S. Smirnov, Discrete stress-energy tensor as a new observable for $O(n)$ model, 2016. arXiv:1604.06339
11. H. Duminil-Copin, A. Glazman, A. Hammond and I. Manolescu, On the probability that self-avoiding walk ends at a given point. *Ann. Prob. (AOP)*, 44 (2016), doi:10.1214/14-AOP993
12. A. Glazman, Connective constant for a weighted self-avoiding walk on \mathbb{Z}^2 . *Electr. Comm. Prob. (ECP)*, 20 (2015), doi:10.1214/ECP.v20-3844
13. A. Glazman, Generalized flowers in k -connected graphs. Part II. *Zapiski Nauchnykh Seminarov POMI*, 417 (2013) translation in *J. Math. Sci. (N.Y.)*, 204 (2015) doi:10.1007/s10958-014-2197-0
14. A. Glazman, A. Sivatski, D. Stolyarov and P. Zatitski, Forms of higher degree over certain fields. *Zapiski Nauchnykh Seminarov POMI*, 394 (2011) translation in *J. Math. Sci. (N.Y.)*, 188 (2013) translation in *J. Math. Sci. (N.Y.)*
15. A. Glazman, Generalized flowers in k -connected graphs. *Zapiski Nauchnykh Seminarov POMI*, 391 (2011) translation in *J. Math. Sci. (N.Y.)*, 184 (2012) doi:10.1007/s10958-012-0883-3

Teaching experience

- 2020–current **Instructor on basic courses for master students**, *Vienna (2020-22), Innsbruck*
Measure Theory, LLN, CLT, martingales, Brownian motion, Poisson processes
- 2019–current **Instructor on a graduate course on Statistical Mechanics**, *Tel Aviv (2019), St. Petesburg (2021, online), Vienna (2022), Innsbruck (2023-24)*
- 2019 **Supervisor of minor master thesis**, *University of Fribourg (non-math students)*
- 2010–20 **TA**, *St. Petersburg, Geneva, Vienna*
Quantum mechanics; Probability; Analysis; Algebra; Discrete mathematics; Statistics for biologists

Outreach

- 2023 **Organiser of Naboj in Innsbruck**, *international math competition for pupils, naboj.org*
- 2013-16 **Founder of “Club de Math” in Geneva**, *Instructor and organiser of three open mathematical olympiads.*, unige.ch/math/clubmath
- 2007-14 **Teacher of math olympiad classes**, *Russia (St. Petersburg, Kirov, Izhevsk) and Kazakhstan*

Reviewing activity:

Inventiones Mathematicae (**Invent. Math.**), Journal of Statistical Physics (**JSP**), Annals of Probability (**AOP**), Communications in Mathematical Physics (**CMP**), Electronic Journal of Probability (**EJP**), Annales de l’Institut Henri Poincaré (**AIHP**) Probabilités et Statistiques (B) and Combinatoires (C), Discrete Math.

Languages

- fluent English, Russian (native), French
- intermediate German (B2)
- basic Hebrew