

Curriculum Vitae

Igor Makhlin

Personal Data Name: Igor Yurievich Makhlin

 Born: 1990, Moscow, USSR

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 Languages: Russian, English, German.

Education

- Undergraduate at the Department of Mechanics and Mathematics at MSU, 2007–2012. Thesis: “Combinatorics of Young tableaux and representations of the algebra \mathfrak{gl}_n ” (under Prof. Boris Feigin).
- Graduate student at the Faculty of Mathematics at NRU HSE, 2012–2015. Doctoral advisor: Prof. Boris Feigin. PhD thesis: “Quasiclassical formulas for the characters of representations of affine algebras”, defended September 2016.

Employment

- Since October 2017: Research Scientist at the Center for Advanced Studies, Skolkovo Institute of Science and Technology.
- October 2016 - September 2017: Postdoctoral Fellow at the Max Planck Institute for Mathematics.
- Since 2014: Research Fellow (formerly Research Assistant) at the Faculty of Mathematics (formerly at the International Laboratory of Representation Theory and Mathematical Physics) at NRU HSE.

Awards and Grants

- 2018 Young Russian Mathematics award winner.
- Russian Science Foundation grant RSF 19-11-00056, 2019 - .
- Russian Science Foundation/German Research Foundation grant RSF-DFG 16-41-01013, 2016 - 2018.
- 19th All-Russian Möbius Contest (2015), 3rd prize.
- 2015 Simons Stipends Contest for Students and Graduate Students of Mathematics winner.

Conference Talks

- “Gröbner fans and semitoric degenerations of flag varieties”, Eighth School-Conference on Lie Algebras, Algebraic Groups and Invariant Theory, Moscow, January 2020. (*In Russian.*)
- “Non-abelian PBW degenerations”, Degeneration Techniques in Representation Theory, Oberwolfach, October 2019

- “Gelfand-Tsetlin degenerations”, ABCD Seminar Workshop, Aachen, February 2019.
- “FFLV degenerations and Gelfand–Tsetlin degenerations”, The 4th KTGU Mathematics Workshop for Young Researchers, Kyoto, September 2018.
- “Weighted PBW degenerations”, Seventh School-Conference on Lie Algebras, Algebraic Groups and Invariant Theory, Samara, August 2018. *(In Russian.)*
- “Degenerate representations and maximal cones in tropical flag varieties”, Spring School: Tropical Geometry meets Representation Theory, Cologne, March 2018.
- “Recent results on FFLV bases and FFLV polytopes”, Workshop on Quiver Grassmannians and their Applications, Wuppertal, March 2017.
- “FFLV polytopes and their vertices”, The Japanese Conference on Combinatorics and its Applications, Kyoto, May 2016.
- “A combinatorial formula for affine Hall-Littlewood functions via a weighted Brion theorem”, 25th British Combinatorial Conference, University of Warwick, July 2015.
- “Character formulas and Brion’s theorem”, Fifth School-Conference on Lie Algebras, Algebraic Groups and Invariant Theory, Samara, June 2015. *(In Russian.)*

Publications

1. E. Feigin, I. Makhlin, *Semitoric degenerations of Hibi varieties and flag varieties*, <https://arxiv.org/abs/2008.13243>
2. I. Makhlin, *Gröbner fans of Hibi ideals, generalized Hibi ideals and flag varieties*, <https://arxiv.org/abs/2003.02916> (to appear in *Journal of Combinatorial Theory, Series A*)
3. I. Makhlin, *PBW degenerate Schubert varieties: Cartan components and counterexamples*, *Algebras and Representation Theory*, 23 (2019), 2315–2330
4. I. Makhlin, *Gelfand–Tsetlin degenerations of representations and flag varieties*, *Transformation Groups* (2020), <https://link.springer.com/article/10.1007/s00031-020-09622-z>
5. X. Fang, E. Feigin, G. Fourier, I. Makhlin, *Weighted PBW degenerations and tropical flag varieties*, *Communications in Contemporary Mathematics*, 21:01 (2019), 1850016
6. I. Makhlin, *FFLV-type monomial bases for type B*, *Algebraic Combinatorics*, 2:2 (2019), 305–322
7. E. Feigin, I. Makhlin, *Vertices of FFLV polytopes*, *Journal of Algebraic Combinatorics*, 45:4 (2017), 1083–1110
8. B. Feigin, I. Makhlin, *A combinatorial formula for affine Hall–Littlewood functions via a weighted Brion theorem*, *Selecta Mathematica*, 22:3 (2016), 1703–1747
9. I. Makhlin, *Brion’s Theorem for Gelfand–Tsetlin Polytopes*, *Functional Analysis and Its Applications*, 50:2 (2016), 98–106
10. I. Makhlin, *Characters of Feigin–Stoyanovsky Subspaces and Brion’s Theorem*, *Functional Analysis and Its Applications*, 49:1 (2015), 15–24