

Khazhgali Kozhasov

Curriculum Vitae

Institut für Analysis und Algebra
Technische Universität Braunschweig
Universitätsplatz 2 38106 Braunschweig Germany
Phone: (+49 531) 391-7509
E-Mail: k.kozhasov@tu-braunschweig.de

Work experience

April 2019 – present	Postdoctoral researcher, TU Braunschweig,
April 2018 – March 2019	Postdoctoral researcher, Max Planck Institut für Mathematik in den Naturwissenschaften,
September 2013 – August 2014	Young research fellow at Laboratory of Geometric Control Theory, Sobolev Institute of Mathematics,
Summer 2013	Intern at Intel Math Kernel Library department in Novosibirsk,

Education

October 2014 – May 2018	Ph.D., International School for Advanced Studies, under the supervision of Andrei Agrachev and Antonio Lerario
2010 - 2014	B.Sc., Novosibirsk State University, under the supervision of Yaroslav Bazaikin

Research interests

- real algebraic geometry
- polynomial optimization
- multilinear algebra
- geometry of random manifolds

Publications and preprints

- *Chebyshev polynomials and best rank-one approximation ratio*, with A. Agrachev and A. Uschmajew, arXiv:1904.00488 [math.AG]
- *On the geometry of the set of symmetric matrices with repeated eigenvalues*, with P. Breiding and A. Lerario, Arnold Math J. (2018), 4:423, <https://doi.org/10.1007/s40598-018-0095-0>
- *The condition number for the polynomial eigenvalues of random matrices*, with C. Beltrán, Found Comput Math (2019), <https://doi.org/10.1007/s10208-019-09414-2>
- *Random spectrahedra*, with P. Breiding and A. Lerario, arXiv:1711.08253 [math.AG], submitted
- *On fully real eigenconfigurations of tensors*, SIAM J. Appl. Algebra Geometry (2018), 2(2), 339–3478

- *On the number of flats tangent to convex hypersurfaces in random position*, with A. Lerario, Discrete Comput Geom (2019), <https://doi.org/10.1007/s00454-019-00067-0>
- *A Geometric flow in the space of G_2 -structures on the cone over $S^3 \times S^3$* , Siberian Mathematical Journal (2015), Volume 56, Issue 6, 1093–1100

Talks and posters

- | | |
|----------------|---|
| July 2019 | ICIAM, Valencia, talk at the minisymposium “Tensor methods” titled “Chebyshev polynomials and best rank-one approximation ratio” |
| July 2019 | SIAM Conference on applied algebraic geometry, Bern, talk at the minisymposium “Matrix and tensor optimization” titled “Chebyshev polynomials and best rank-one approximation ratio” |
| May 2019 | Otto-Sturmfels meeting, Leipzig, talk “Analytic properties of inverse powers of hyperbolic polynomials” |
| May 2019 | workshop “Hyperbolic polynomials and hyperbolic programming”, Berkeley, invited talk “ <i>Formulas for Riesz kernels</i> ” |
| April 2019 | Tensor meeting, Leipzig, talk “Chebyshev polynomials and best rank-one approximation ratio” |
| October 2018 | workshop “Random algebraic geometry”, Trieste, invited talk “ <i>On random symmetric matrices with multiple spectrum</i> ” |
| December 2017 | “Contemporary mathematics” (a conference in honor of the 80th birthday of Vladimir Arnold), Moscow, contributed talk “ <i>Spherical harmonics with maximum number of critical points</i> ” |
| September 2017 | SIAM event “A Day in Applied Mathematics”, Politecnico di Milano, contributed talk “ <i>Symmetric tensors with only real eigenvectors</i> ” |
| August 2017 | Stockholm Master Class in Tropical Geometry, Stockholm University, contributed talk “ <i>Eigenvectors of high order tensors</i> ” |
| July 2017 | FoCM workshop “Real number complexity”, Barcelona, poster “ <i>On the number of tangents to hypersurfaces in $\mathbb{R}P^n$ in random position</i> ” |
| August 2014 | International conference “Geometric control theory and analysis on metric structures”, Lake Baikal, invited talk “ <i>First order flow of G_2-structures on $C(S^3 \times S^3)$</i> ” |
| July 2014 | Research school “An Invitation to Geometry and Topology via G_2 ”, Imperial College London, poster “ <i>First order flow of G_2-structures on $C(S^3 \times S^3)$</i> ” |
| April 2014 | International Youth Conference “Geometry and Control”, Steklov Mathematical Institute, invited talk “ <i>Laplacian flow of G_2-structures on $S^3 \times \mathbb{R}^4$</i> ” |
| April 2014 | International Scientific Student Conference, Novosibirsk State University, contributed talk “ <i>Deformations of G_2-structures on $S^3 \times \mathbb{R}^4$</i> ” |

Teaching experience

Spring 2019	Polynomial optimization and nonnegativity, teaching assistant, Institut für Analysis und Algebra, Technische Universität Braunschweig
Spring 2017	Algebra 2, teaching assistant, Department of Mathematics and Geosciences, University of Trieste
Spring 2016	Algebra 1, teaching assistant, Department of Mathematics and Geosciences, University of Trieste
Spring 2016	General and algebraic topology, teaching assistant, Department of Mathematics and Geosciences, University of Trieste
Spring 2013, Spring 2014	Preparation of high school students to the Unified State Exam in Mathematics, Novosibirsk

Computer skills

Good knowledge of Mathematica, Maple, Matlab, LaTeX, C, Perl

Languages

Russian	Mother tongue
English	Fluent
Italian	Fluent
Spanish	Intermediate
German	Intermediate