

Alexander Perepechko

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Born on 7th October 1988
in Novosibirsk, Russia.

Research Career

- 2016–present **Institute for Information Transmission Problems**, *Research position*, Sector 4.1 Of Dobrushin Mathematics Laboratory, Algebra and Number Theory.
- 2014–2015 **Saint-Petersburg State University**, *Postdoctoral position*, Chair of Higher Algebra and Number Theory, Faculty of Mathematics and Mechanics, Scientific Supervisor N.A. Vavilov.

Education

- 2010–2013 **Moscow State University & University of Grenoble**, *PhD in Co-Tutorship*, Chair of Higher Algebra, Faculty of Mechanics and Mathematics, Scientific Supervisor I.V. Arzhantsev & Institut Fourier, Scientific Supervisor M.G. Zaidenberg.
- 2005–2010 **Moscow State University**, *Department of Higher Algebra*, Faculty of Mechanics and Mathematics, Scientific Supervisor I.V. Arzhantsev.
- 1995–2005 **Lyceum-school 130**, Novosibirsk, Russia.

Mathematical interests

Lie algebras and their representations
Invariant theory
Automorphisms of finite-dimensional algebras
Locally nilpotent derivations
Flexibility of affine varieties
Automorphism groups of affine varieties
Actions of ind-groups
T-varieties

Research publications

- Affine algebraic monoids as endomorphisms' monoids of finite-dimensional algebras*, **Proceedings of the American Mathematical Society** **137** (2009), 3227–3233.
- Flexibility of affine cones over del Pezzo surfaces of degree 4 and 5*, **Functional Analysis and Applications** **47** (2013), no. 4, 45–52.
- On solvability of the automorphism group of a finite-dimensional algebra*, **Journal of Algebra** **403** (2014), pp. 445–458.
- (with Ivan Arzhantsev and Hendrik Süß) *Infinite transitivity on universal torsors*, **Journal of the London Mathematical Society** **89** (2014), no. 3, 762–778.
- (with Kevin Langlois) *Demazure roots and spherical varieties: the example of horizontal $SL(2)$ -actions*, preprint; arXiv:1406.5744.
- (with Sergei Kovalenko and Mikhail Zaidenberg) *On automorphism groups of affine surfaces*, **Advanced Studies in Pure Mathematics** **75** (2017), Algebraic Varieties and Automorphism Groups, pp. 207–286; arXiv:1511.09051.
- (with Mateusz Michalek and Hendrik Süß) *Flexible affine cones and flexible coverings*, **Mathematische Zeitschrift** **290** (2018), no. 3-4, 1457–1478.
- (with Nikolay Bogachev) *Vinberg's Algorithm for Hyperbolic Lattices*, **Mathematical Notes** **103**, (2018), no. 5–6, 836–840.
- (with Andriy Regeta) *When is the automorphism group of an affine variety nested?*, preprint, arXiv:1903.07699.

Talks

- June 2009 **Summer School “Lie Algebras, Algebraic Groups and Invariant Theory”**, *Samara, Russia*, Talk “Affine algebraic monoids as endomorphisms’ monoids of finite-dimensional algebras”.
- May 2010 **Conference “Malt’ssev meeting”**, *Novosibirsk, Russia*, Presentation “Affine algebraic monoids as endomorphisms’ monoids of finite-dimensional algebras”.
- November 2010 **Workshop “Automorphismes des Espaces Affines”**, *Dijon, France*.
- March 2011 **Seminar “Lie Groups and Invariant Theory”**, *Moscow, Russia*, Talk “Flexibility of affine cones over del Pezzo surfaces of degree 5 and 4”.
- May 2011 **Mini-course on a flexibility of affine toric varieties at Sobolev Institute of Mathematics**, *Novosibirsk, Russia*, In the context of the project 14.740.11.0346, *Actual problems of modern algebra*, supported by the Ministry of education and science of Russian Federation.
- February 2012 **“Swiss-French workshop on algebraic geometry”**, *Enney, Switzerland*, Talk “Flexibility of affine cones over del Pezzo surfaces of degree 5 and 4”.
- June 2012 **International Conference dedicated to the 65-th anniversary of Askold G. Khovanskii**, *Moscow, Russia*, Talk “Flexibility of affine cones over del Pezzo surfaces of degree 4 and 5”.
- June 2012 **Third Summer School “Lie Algebras, Algebraic Groups and Invariant Theory”**, *Togliatti, Russia*, Talk “Flexibility of affine cones over del Pezzo surfaces of degree 4 and 5”.
- April 2013 **Talk “Flexibility of universal torsors” at the Seminar of Algebra and Geometry**, *Basel, Switzerland*.
- January 2014 **Fourth School “Lie Algebras, Algebraic Groups and Invariant Theory”**, *Moscow, Russia*, Talk “Flexibility of affine varieties”.
- July 2014 **Kyoto Workshop on Algebraic Varieties and Automorphism Groups**, *Kyoto, Japan*, Talk “Flexible varieties covered by toric charts”.
- July 2014 **International Short-School/Conference “Affine Algebraic Geometry & the Jacobian Conjecture”**, *Tianjin, China*, Talk “Flexible varieties covered by toric charts”.
- December 2014 **Talk “Flexibility of affine cones and total coordinate spaces” at the Algebraic Geometry Seminar at IBS Center for Geometry and Physics**, *Pohang, Korea*.
- June 2015 **Conference “Meeting of generations” by Dynasty Foundation**, *Moscow, Russia*, Talk “Automorphism groups of affine surfaces”.
- June 2015 **Fifth School “Lie Algebras, Algebraic Groups and Invariant Theory”**, *Samara, Russia*, Talk “Automorphism groups of affine surfaces without additive actions”.
- August 2015 **School (and Workshop) on Finite Subgroups of Cremona Groups**, *Trento, Italy*, Talk “Automorphism groups of affine surfaces without additive actions”.
- January 2017 **Christmas meetings**, *Moscow, Russia*, Talk “Automorphism groups of affine varieties consisting of algebraic elements”.
- January 2017 **Sixth School “Lie Algebras, Algebraic Groups and Invariant Theory”**, *Moscow, Russia*, Talk “Automorphism groups of affine varieties consisting of algebraic elements”.
- January 2018 **Conference “Polynomial Rings and Affine Algebraic Geometry”**, *Tokyo, Japan*, Talk “Nested automorphism groups”.
- May 2018 **Conference “Algebraic Geometry - Mariusz Koras in memoriam”**, *Warsaw, Poland*, Talk “Nested automorphism groups”.
- April 2019 **Seminar “Lie Groups and Invariant Theory”**, *Moscow, Russia*, Talk “Nested automorphism groups”.
- September 2019 **Conference “Emerging Research in Algebraic Groups, Motives, and K-Theory”**, *St.Petersburg, Russia*, Talk “Nested automorphism groups”.

Scholarships

- 2008 Moscow Government Scholarship
- 2012 Russian Government Scholarship
- 2010–2013 French Government Scholarship
- 2013 Simons Scholarship
- 2015 Dynasty Scholarship

Student awards

- 2007 **International Mathematical Competition for University Students**, *First prize*.
2008 **MIPT Math Olympiad for Undergraduate Students**, *Second prize*.
2009 **International Mathematical Competition for University Students**, *First prize*.
2009 **MIPT Math Olympiad for Undergraduate Students**, *First prize*.

Languages

Russian native
English advanced
French intermediate