

Alexander Perepechko

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Born on 7th October 1988
in Novosibirsk, Russia.

Education

- 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.
- 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

Algebraic groups and monoids
Lie algebras and their representations
Invariant theory
Automorphisms of finite-dimensional algebras
Locally nilpotent derivations
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*, preprint; arXiv:1511.09051.

Conference proceedings

Affine monoids as endomorphisms' monoids of finite-dimensional algebras, **Summer school-conference on Lie Algebras, Algebraic Groups and Invariant Theory, Samara, Russia, June 8–15, 2009, Abstracts**, Samara, Univers-Group, 2009, 40–41

On solvability of the automorphism group of a finite-dimensional algebra, **The Second school-conference on Lie Algebras, Algebraic Groups and Invariant Theory, Moscow, Russia, January 31 – February 5, 2011, Abstracts**, Moscow, Publ. Dept. Mech. Math. MSU, 2011, 52–54

Flexibility of affine cones over del Pezzo surfaces of degree 4 and 5, **The Third international School-Conference on Lie Algebras, Algebraic Groups and Invariant Theory, dedicated to the 75th birthday of E.B. Vinberg, Togliatti, Russia, June 25–30, 2012, Abstracts, Togliatti, 2012, 35–37**

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”.

Scholarships

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

Projects

- 2012–2013 *Infinitely transitive action of automorphism groups and locally nilpotent derivations*, project 12–01–31342 supported by RFBR
- 2012–2013 *Algebraic transformation groups, equivariant symplectic geometry and representation theory*, project 12–01–00704–a supported by RFBR
- 2012–2013 *Automorphisms, derivations, and additive structures on algebraic varieties*, project 8214 supported by the Ministry of education and science of Russian Federation

December 2013 Collaboration project in context of *Réseau franco-russe de formation et de recherche en mathématiques* supported by GDRI, France

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