

Curriculum Vitae

Yury Volkov

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Department of Mathematics and Mechanics
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Research interests:

- Cohomology and representation theory of associative algebras (Hochschild homology and cohomology, derived categories, derived Picard group, Koszul algebras, Frobenius algebras, smash product);
- Deformations of non-associative algebras (degenerations, degeneration level, algebraic varieties, rigid algebras, irreducible components).

Education:

May. 2017: Pos-Doutorado in Algebra
University of Sao Paulo
Advisor: Eduardo Marcos do Nascimento

Dec. 2011: Ph.D., Mathematics
Saint-Petersburg State University (Russia)
Advisor: Alexander I. Generalov
Thesis: Hochschild cohomology of self-injective algebras of tree class D_n .

Jun. 2008: Specialist degree, Mathematics
Saint-Petersburg State University (Russia).

Academic positions:

Sep. 2017 - actual:

Associate Professor of Mathematics.

Saint-Petersburg State University, Saint-Petersburg, Russia.

Jun. 2015 - Aug. 2017:

Researcher of chair of algebra and number theory.

Saint-Petersburg State University, Saint-Petersburg, Russia.

Jun. 2015 - May. 2017:

Postdoctoral researcher.

Institute of Mathematics and Statistics, University of Sao Paulo, Brazil.

Sep. 2013 - May. 2015:

Assistant of chair of algebra and number theory.

Saint-Petersburg State University, Saint-Petersburg, Russia.

Feb. 2011 - Dec. 2012:

Research engineer of laboratory of operations research.

Research Institute of Mathematics and Mechanics of Academician V. I. Smirnov of Saint-Petersburg State University, Saint-Petersburg, Russia.

Publications:

1. Volkov Yu., *Gerstenhaber bracket on the Hochschild cohomology via an arbitrary resolution.* — Proc. Edinb. Math. Soc., doi: 10.1017/S0013091518000901 (2019).
2. Ismailov N., Kaygorodov I., Volkov Y. *Degenerations of Leibniz and anticommutative algebras.* — Canad. Math. Bull., doi: 10.4153/S0008439519000018 (2019).
3. Kaygorodov I., Volkov Yu., *The degeneration level classification of algebras.* — accepted to Moscow Math. J. (2018).
4. Kaygorodov I., Volkov Yu., *The variety of 2-dimensional algebras over an algebraically closed field.* — Canad. J. Math., doi: 10.4153/S0008414X18000068 (2018).
5. Volkov Y., Zvonareva A. *Külshammer ideals of graded categories and Hochschild cohomology.* — Alg. Rep. Theory, 21(6), 1251–1275 (2018).
6. Kaygorodov I., Popov Yu., Volkov Yu., *Degenerations of binary Lie and nilpotent Malcev algebras.* — Comm. Alg., 46 (11), 4928–4940 (2018).
7. Ismailov, N., Kaygorodov I., Volkov Yu., *The geometric classification of Leibniz algebras.* — Int. J. Math., 29(5), 1850035 (2018).
8. Marcos E., Solotar A., Volkov Yu., *Generating degrees for graded projective resolutions.* — J. Alg. Appl., 17(10), 1850191 (2018).
9. Volkov Y., Zvonareva A. *On standard derived equivalences of orbit categories.* — Alg. Rep. Theory, 21 (1), 195–217 (2018).
10. Kaygorodov I., Popov Yu., Pozhidaev A., Volkov Yu., *Degenerations of Zinbiel and nilpotent Leibniz algebras.* — Lin. Multilin. Alg., 66 (4), 704–716 (2018).
11. Kaygorodov I., Volkov Y. *Conservative algebras of 2-dimensional algebras, II.* — Comm. Alg., 45 (8), 3413–3421 (2017).
12. Volkov Y., Zvonareva A. *Derived Picard groups of selfinjective Nakayama algebras.* — Manuscripta Math., 152 (1), 199–222 (2017).
13. Volkov Yu. V. *BV-differential on Hochschild cohomology of Frobenius algebras.* — J. Pure and Appl. Alg. 220 (10), 3384–3402 (2016).
14. Ivanov A. A., Ivanov S. O., Volkov Yu. V., Zhou G. *BV structure on Hochschild cohomology of the group ring of quaternion group of order eight in characteristic two.* — J. Algebra 435, 174–203 (2015).
15. Alekhin A. P., Volkov Yu. V., Generalov A. I. *The Hochschild cohomology ring for modular group.* — St. Petersburg Math. J. 26, 1–25 (2015).

16. Volkov Yu. V. *Hochschild cohomology for self-injective algebras of tree class D_n* . VI. — J. Math. Sci., New York 209 (4), 500–514 (2015).
17. Volkov Yu., Kukharev A., Puninski G. *The seriality of the group ring depends only on the characteristic of the field*. — J. Math. Sci., New York 209 (4), 515–521 (2015).
18. Ivanov S.O., Volkov Yu. V. *Stable Calabi-Yau dimension of self-injective algebras of finite type*. — J. Algebra 413, 72–99 (2014).
19. Volkov Yu. V. *Hochschild cohomology for self-injective algebras of tree class D_n* . V. — J. Math. Sci., New York 188 (5), 551–569 (2013).
20. Volkov Yu. V. *The Hochschild cohomology algebra for a family of self-injective algebras of tree class D_n* . — St. Petersburg. Math. J. 23 (5), 851–879 (2012).
21. Volkov Yu. V., Generalov A. I. *Hochschild cohomology for self-injective algebras of tree class D_n* . III. — J. Math. Sci., New York 180 (3), 252–268 (2012).
22. Volkov Yu. V. *Hochschild cohomology for nonstandard self-injective algebras of tree class D_n* . — J. Math. Sci., New York 185 (3), 600–628 (2012).
23. Volkov Yu. V. *Hochschild cohomology for self-injective algebras of tree class D_n* . IV. — J. Math. Sci., New York 183 (5), 629–639 (2012).
24. Volkov Yu. V., Generalov A. I., Ivanov S.O. *On the construction of bimodule resolutions with the help of the Happel lemma*. — J. Math. Sci., New York 171 (3), 338–343 (2010).
25. Volkov Yu. V. *Hochschild cohomology for self-injective algebras of tree class D_n* . II. — J. Math. Sci., New York 161 (4), 492–524 (2009).
26. Volkov Yu. V. *Stable equivalence classes of self-injective algebras of tree class D_n* . — Vestn. St. Petersburg. Univ., Math. 41 (1), 9–14 (2008).
27. Volkov Yu. V., Generalov A. I. *Hochschild cohomology for self-injective algebras of tree class D_n* . I. — J. Math. Sci., New York 147 (5), 7042–7073 (2007).
28. Marcos E., Volkov Y. *Hochschild cohomology of a smash product in the non-semisimple case*. — arxiv:1511.05388.
29. Marcos E., Volkov Y. *s-homogeneous algebras via s-homogeneous triples*. — arXiv:1711.10664.
30. Marcos E., Volkov Y. *Homogeneous triples for homogeneous algebras with two relations*. — arXiv:1812.05453.
31. Negron C., Volkov Y., Witherspoon S. *A_∞ -coderivations and the Gerstenhaber bracket on Hochschild cohomology*. — arXiv:1805.03167.

32. Volkov Y. *On the derived category of quasi-hereditary algebras with two simple modules.* — arXiv:1812.00351.
33. Volkov Y. *Groups generated by two twists along spherical sequences.* — arXiv:1901.10904.

Conference proceedings:

Hochschild cohomology of a smash product with a cyclic group. — “Hochschild Cohomology in Algebra, Geometry, and Topology”, Oberwolfach Reports 13 (1), 481–483 (2016).

Conferences:

1. 2018, Aug. - Czech Republic, 18th International Conference and Workshop on Representations of Algebras (ICRA 2018);
2. 2018, Feb. - Spain, Non-Associative Algebras in Cádiz;
3. 2017, March - Brasil, Conference in Representation Theory of the Americas;
4. 2016, Aug. - USA, 17th International Conference and Workshop on Representations of Algebras (ICRA 2016);
5. 2016, Aug. - Brasil, Escola de Algebra;
6. 2016, July - Argentina, XXI Coloquio Latinoamericano de Algebra;
7. 2016, March - Argentina, CIMPA School, Homological Methods, Representation Theory and Cluster Algebras;
8. 2016, February - Germany, Oberwolfach, Workshop on Hochschild Cohomology in Algebra, Geometry, and Topology;
9. 2015, December - Uruguay, Montevideo, XXIV Encuentro Rioplatense de Algebra y Geometria - 60 anos de Claude Cibils ;
10. 2014, August - China, Sanya, 16th International Conference and Workshop on Representations of Algebras (ICRA 2014);
11. 2014, May - USA, Woods Hole, Maurice Auslander Distinguished Lectures and International Conference;
12. 2011, Jul. - Russia, Novosibirsk, Int. Conf. on Rings theory in honor of 90th Birthday of Prof. A. Shirshov;
13. 2010, Jun. - Russia, Saint-Peterburg, Int. Conf. on honor of 70th Birthday of Prof. A. Yakovlev;
14. 2007, Sep. - Russia, Saint-Peterburg, Int. Conf. in honor of 100th Birthday of Prof. D. K. Faddeev.

Grants:

1. 2018 / 2019 – Russian Foundation for Basic Research (No 18-31-20004, Head: Dr. Yury Volkov)
2. 2018 / 2019 – Russian Foundation for Basic Research (No 18-31-00001, Head: Yury Popov)
3. 2017 / 2018 – Russian Foundation for Basic Research (No 17-51-04004, Head: Dr. Yury Volkov);
4. 2017 / 2019 – Russian Foundation for Basic Research (No 17-01-00258, Head: Dr. Alexander Generalov);
5. 2017 / 2018 – The Russian Federation President grant for Young Russian Scientists (No MK-1378.2017.1, Head: Dr. Yury Volkov);
6. 2016 / 2017 – Russian Foundation for Basic Research (No 16-31-00004, Head: Dr. Yury Volkov);
7. 2015 / 2016 – Russian Foundation for Basic Research (No 15-51-04099, Head: Dr. Artem Lopatin);
8. 2015 / 2016 – Russian Foundation for Basic Research (No 15-31-21169, Head: Dr. Artem Lopatin);
9. 2014 / 2016 – R&D ”Structure theory, classification, geometry, K-theory and arithmetics of algebraic groups and related structures” (No 6.38.191.2014, Head: Dr. Nikolay Vavilov);
10. 2014 / 2015 – The Russian Federation President grant for the Leading Scientific Schools (project No 6.10.521.2014, Head: Dr. Anatoly Yakovlev);
11. 2014 / 2015 – Russian Foundation for Basic Research (No 14-01-31084, Head: Dr. Tatyana Skoraya);
12. 2013 / 2015 – Russian Foundation for Basic Research (No 13-01-00902, Head: Dr. Alexander Generalov);
13. 2011 / 2013 – R&D ”Structural theory and geometry of algebraic groups and their applications in the representation theory and the algebraic K-theory” (No 6.38.74.2011, Head: Dr. Nikolay Vavilov);
14. 2010 / 2012 – Russian Foundation for Basic Research (No 10-01-00635, Head: Dr. Alexander Generalov);
15. 2010 / 2011 – The Russian Federation President grant for the Leading Scientific Schools (project No 6.10.254.2010, Head: Dr. Anatoly Yakovlev);
16. 2010 / 2012 – Federal Target Grant ”Scientific and educational personnel of innovation Russia” for 2009-2013 (government contract No 6.31.578.2010, Head: Dr. Viktor Pliss).