

## Curriculum Vitae

Ilya B. Gorshkov

### Personal Data

Date of Birth: October 16, 1984.

Place of Birth: Pavlodar, Kazahstan.

E-mail: ilygor8@gmail.com

Languages: Russian (Native), Portuguese, English.

Research interests:

Finite groups, Simple Groups, Non-associative rings and algebras, Axial algebras, Quandles, Braces.

### Education and degrees:

November 2020:

Doctor of Science in Physics and Mathematics (Habilitation), Sobolev Institute of Mathematics.

November 2013:

Ph.D., Mathematics, Sobolev Inst. of Math., Novosibirsk, Russia,

Advisors: Andrey V. Vasil'ev.

Thesis: Arithmetic characterization of finite simple groups.

June 2010:

Master of Mathematics, Novosibirsk State University (Russia).

June 2008:

Bachelor of Mathematics, Novosibirsk State University (Russia).

### Employment

Jul. 2021 :

Leading Research, Sobolev Inst. of Math., Novosibirsk, Russia.

Sep. 2018 – Jul. 2021:

Researcher, Sobolev Inst. of Math., Novosibirsk, Russia.

Sep. 2016– Sep. 2018:

Visiting professor, University of Santo Andre, UFABC, Brasil.

Sep. 2014 – Sep. 2016:

Post-doc, University of Sao Paulo, USP, Brasil.

Jan. 2014 – Sep. 2014:

Researcher, Sobolev Inst. of Math., Novosibirsk, Russia.

Nov. 2010 – Jan. 2014:

Junior researcher, Sobolev Inst. of Math, Novosibirsk, Russia.

### Participation at Conferences and Seminars:

#### Conferences:

- (1) 2021, Jun. - Slovenia, Rogla, Graphs and Groups, Geometries and GAP - G2G2 (plenary talk);
- (2) 2020, Aug. - Russia, Ekaterinburg, 2020 Ural Workshop on Group theory and Combinatorics (plenary talk);
- (3) 2020, Feb. - Spain, Malaga, III International Workshop on Non-Associative Algebras in Malaga (plenary talk);
- (4) 2019, Aug. - Italy, Venice, FINITE GROUPS AND RELATED GEOMETRICAL STRUCTURES;
- (5) 2019, Jan. - Brasil, Rio de Janeiro, IMPA Verao;
- (6) 2018, Aug. - Russia, Novosibirsk, International Conference and PhD-Master Summer School on Graphs and Groups, Spectra and Symmetries;
- (7) 2018, Jan. - Brasil, Rio de Janeiro, IMPA Verao;
- (8) 2017, Jan. - Brasil, Rio de Janeiro, IMPA Verao;
- (9) 2016, Aug. - Brasil, Diamantina, 24th Brazilian Algebra Meeting;
- (10) 2016, Jan. - Brasil, Rio de Janeiro, IMPA Verao;
- (11) 2015, Aug. - Belarus, Minsk, Discrete Mathematics, Algebra and Their Applications;
- (12) 2015, Jan. - Brasil, Rio de Janeiro, IMPA Verao;
- (13) 2014, Dec. - Peru, Lima, XX Coloquio Latinoamericano de Algebra «Ingeniero Orlando Eugenio Villamayor»;
- (14) 2014, Nov. - Russia, Novosibirsk, International conference «Malcev meeting»;
- (15) 2013, Nov. - Russia, Novosibirsk, International conference «Malcev meeting»(plenary talk);
- (16) 2012, Nov. - Belarus, Minsk, XI Belarusian Mathematical Conference;
- (17) 2012, Aug. - Russia, Novosibirsk, Int. Workshop «Algorithmic problems in group theory and related areas»;
- (18) 2011, Sep. - Russia, Kazan, International Conference «Algebra and Logic», in honor of 100th V. V. Morozov;
- (19) 2011, Jan. - Russia, Ekaterinburg, 42 school-conference of mathematics and mechanics;
- (20) 2010, Aug. - Russia, Novosibirsk, Int. Workshop «Algorithmic problems in group theory and related areas»;

- (21) 2010, July. - Russia, Nalchik, VIII International school-conference by group theory;
- (22) 2010, May. - Russia, Novosibirsk, Int. Conf. in honor of 70th Birthday of Prof. Yu. Ershov;
- (23) 2010, Jan. - Russia, Ekaterinburg, 41 school-conference of mathematics and mechanics;
- (24) 2009, Sep. - Russia, Kazan, International Conference «Algebra and Logic»;
- (25) 2009, Aug. - Russia, Novosibirsk, Int. Conf. in honor of 100th Birthday of Prof. A. Malcev;
- (26) 2009, Jun. - Russia, Ekaterinburg, 40 school-conference of mathematics and mechanics;
- (27) 2008, Nov. - Russia, Novosibirsk, International conference «Malcev meeting»;
- (28) 2008, Jan. - Russia, Ekaterinburg, 39 school-conference of mathematics and mechanics;
- (29) 2007, Sep. - Russia, Novosibirsk, Int. Conf. in honor of the 50th Birthday of Sobolev Institute of Math.;

Seminars:

- (30) Beijing, China (2021);
- (31) Venice, Italy, MAVAM (2021);
- (32) Novosibirsk State university, Algebra and Logic (2008, 2010, 2013, 2019);
- (33) Sobolev Inst. of Math., Group theory (2007, 2008, 2010, 2013, 2019);
- (34) Universidade Federal do ABC (Santo Andre, Brazil: 2015);
- (35) Universidade de Sao Paulo (Sao Paulo, Brazil: 2014);

**Main publications:**

- (1) Gorshkov, I.B., Nasybullov T.R., Finite skew braces with solvable additive group, *Journal of Algebra*, 2021, 574, 172–183
- (2) Gorshkov I.B., Kukharev A.V., Finite groups with prime graphs of diameter 5, *Communications in Mathematics*, 2021, 28(3), 307–312
- (3) Gorshkov I.B., Staroletov A.M., On primitive 3-generated axial algebras of Jordan type, *Journal of Algebra*, 2020, 563, 74–99
- (4) Gorshkov I., Kaygorodov I., Khrypchenko M., The algebraic classification of nilpotent Tortkara algebras, *Communications in Algebra*, 2020, 48(8), 3608–3623
- (5) Gorshkov I.B., Maslova N.V., The group  $J_4 \times J_4$  is recognizable by spectrum, *Journal of Algebra and its Applications*, *Journal of Algebra and its Applications*, 2020, 2150061
- (6) Gorshkov I., Kaygorodov I., Khrypchenko M., The geometric classification of nilpotent Tortkara algebras, *Communications in Algebra*, *Communications in Algebra*, 2020, 48(1), 204–209
- (7) Gorshkov I.B. On existence of normal p-complement of finite groups with restrictions on the conjugacy class sizes, arXiv:1812.03641
- (8) Gorshkov I.B. On a Finite Group with Restriction on Set of Conjugacy Classes Size, *Bulletin of the Malaysian Mathematical Sciences Society*, 2020, 43(4), 2995–3005
- (9) Gorshkov I., Kaygorodov I., Popov Yu., Degenerations of Jordan algebras and Marginal algebras, *Algebra Colloquium*, (2019), accepted
- (10) Gorshkov I.B. On Thompson’s conjecture for finite simple groups, *Communications in Algebra*, *Communications in Algebra*, 47(2019), 12, 5192–5206.
- (11) Gorshkov I., Kaygorodov I., Kytmanov A., Salim M., The variety of nilpotent Tortkara algebras, *Journal of Siberian Federal University*, 12(2019), 2, 173–184.
- (12) Gorshkov I. B.; Staroletov A.M. On groups having the prime graph as alternating and symmetric groups, *Communications in Algebra* 47(2019), 9, 3905–3914
- (13) Gorshkov I. B. Thompson’s conjecture for alternating groups, *Communications in Algebra*, V.47:1 (2019), 30–36
- (14) Gorshkov I. B.; Maslova N. V. Finite almost simple groups with Gruenberg-Kegel graphs like the ones on solvable groups, *Algebra Logic* 57 (2018), no. 2, 115–129.
- (15) Kukharev A. V.; Kaigorodov I. B.; Gorshkov I. B. When the group ring of a simple finite group is semiserial. *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* 460 (2017), *Voprosy Teorii Predstavlenii Algebr i Grupp.* no. 32, 168–189.
- (16) Gorshkov I. B.; Kukharev A. V.; Kaigorodov I. B.; Shlepkin A.A. On Thompson’s conjecture for finite simple exceptional groups of Lie type. *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* 460 (2017), *Voprosy Teorii Predstavlenii Algebr i Grupp.* no. 34, 78–100.
- (17) Gorshkov I. B. On Thompson’s conjecture for alternating groups of large degree. *J. Group Theory* 20 (2017), no. 4, 719–728.

- (18) Gorshkov I. B.; Grishkov A. N.; Zavarnitsin A. V. On two problems related to associators of Moufang loops. *Mat. Zametki* 101 (2017), no. 2, 211–214. 3
- (19) Gorshkov I. B.; Grishkov A. N. On recognition by spectrum of symmetric groups. *Sib. Elektron. Mat. Izv.* 13 (2016), 111–121.
- (20) Gorshkov I. B. On Thompson's conjecture for alternating and symmetric groups of degree greater than 1361. *Tr. Inst. Mat. Mekh.* 22 (2016), no. 1, 44–51
- (21) Gorshkov I. B. Towards Thompson's conjecture for alternating and symmetric groups. *J. Group Theory* 19 (2016), no. 2, 331–336.
- (22) Gorshkov I. B. Recognizability of symmetric groups by spectrum. *Algebra Logika* 53 (2014), no. 6, 693–703.
- (23) Gorshkov I. B. Recognizability of alternating groups by spectrum, *Algebra Logika*, 52:1 (2013), 57–63.
- (24) Gorshkov I. B. Thompson's conjecture for simple groups with connected prime graph, *Algebra Logika*, 51:2 (2012), 168–192.
- (25) Gorshkov I. B. Recognition by spectrum for finite simple groups with orders having prime divisors at most 17, *Sib. Elektron. Mat. Izv.*, 7 (2010), 14–20.
- (26) Gorshkov I. B.; Vasil'ev A. V. On recognition of finite simple groups with connected prime graph, *Sibirsk. Mat. Zh.*, 50:2 (2009), 292–299.
- (27) Gorshkov I. B.; Vasil'ev A. V.; Grechkoseeva M. A.; Kondrat'ev A. S.; Staroletov A. M. On recognizability by spectrum of finite simple groups of types  $B_n$ ,  $C_n$ , and  ${}^2D_n$  for  $n = 2k$ , *Proceedings of the Steklov Institute of Mathematics*, 267:1 (2009), 218–233.
- (28) Gorshkov I. B. On groups with composition factor  $Alt_7$ , *Algebra and Model theory*, 6 (2007), 21–38.

### Achievements

- (1) Award the best scientific results of Institute of Mathematics of the Siberian Branch of the Russian Academy of Sciences, Novosibirsk, 2013.
- (2) First-degree Diploma of 46 International scientific student conference, Novosibirsk, 2008.
- (3) Second-degree Diploma of 45 International scientific student conference, Novosibirsk, 2007.

### Other activities:

Member of organizing committees:

- (1) Online Axial seminar.
- (2) Online seminars entitled "Kourovka forum".
- (3) International Conference on Group Theory in Honor of the 70th Birthday of Professor Victor D. Mazurov , Novosibirsk, Russia, July 2013
- (4) Int. Workshop «Algorithmic problems in group theory and related areas», Novosibirsk, Russia, Aug. 2010
- (5) International Conference «Malcev meetings», Novosibirsk, Russia, Oct. 2007