

List of publications

1 To appear

- 1 A. Kupavskii, M. Zhukovskii, “Short monadic second order sentences about sparse random graphs”, SIDMA, 2016, under review.
- 2 O. Verbistky, M. Zhukovskii, The Descriptive Complexity of Subgraph Isomorphism without Numerics, 2017, to appear in Theory of Computing Systems (TOCS).
- 3 M.E. Zhukovskii, Quantifier alternations of first order sentences with infinite spectra, PPI, 2017, in print.
- 4 O. Verbistky, M. Zhukovskii, On the First-Order Complexity of Induced Subgraph Isomorphism, 2017, to appear in Logical Methods in Computer Science (LMCS).
- 5 D.I. Dmitriev, M.E. Zhukovskii, On a connection of two theoretical graph problems with hypothesis of Ramanujan and Samuels, UMN, 2017, in print.
- 6 M.E. Zhukovskii, Logical laws for short existential monadic second order sentences about graphs, submitted to RSA, 2018.

2 Published in 2018

- 1 A.V. Burkin, M.E. Zhukovskii, Extensions and small subgraphs in a random distance graph, SB MATH, 2018, **209**, in press, DOI:10.1070/SM8674.
- 2 A.D. Matushkin, M.E. Zhukovskii, First order sentences about random graphs: small number of alternations, Discrete Applied Mathematics, 2017, **236**: 329–346, <https://doi.org/10.1016/j.dam.2017.10.017>.

3 Published in 2017

- 1 M.E. Zhukovskii, On the zero-one k -law extensions, European J. of Combinatorics, 60 (2017): 66-81.
- 2 M.E. Zhukovskii, A.B. Kupavskii, “Spectra of short monadic sentences about sparse random graphs”, Doklady Mathematics, 2017, Vol. 95, No. 1, pp. 60–61 (Original Russian Text: 2017, Vol. 472, No. 5, pp. 503-505).
- 3 A.D. Matushkin, M.E. Zhukovskii, Spectra of first-order formulas with a low quantifier depth and a small number of quantifier alternations, Doklady: Mathematics, 2017, Vol. 96, No. 1, pp. 326–328 (Original Russian Text: 2017, Vol. 475, No. 2, pp. 127–129).
- 4 L.B. Ostrovsky, M.E. Zhukovskii, “Monadic second-order properties of very sparse random graphs”, Annals of pure and applied logic, 2017, Vol. 168, pp. 2087–2101.
- 5 M.G. Sanchez, M.E. Zhukovskii, Logical laws for existential monadic second order sentences with infinite first order parts, Doklady: Mathematics, 2017, in print.
- 6 M.E. Zhukovskii, On First-Order Definitions of Subgraph Isomorphism Properties, Doklady: Mathematics, 2017, 96(2): 454–456 (Original Russian text: 2017, Vol. 476, No. 3, pp. 256–259).
- 7 L.B. Ostrovsky, M.E. Zhukovskii, First-order properties of bounded quantifier depth of very sparse random graphs, Izvestiya: Mathematics (2017), 81 (6):1155–1167.

- 8 O. Verbitsky and M. Zhukovskii, On the First-Order Complexity of Induced Subgraph Isomorphism, 26th EACSL Annual Conference on Computer Science Logic (CSL 2017),40:1–40:16, Leibniz International Proceedings in Informatics (LIPIcs), 2017, Vol. 82, doi 10.4230/LIPIcs.CSL.2017.40.
- 9 O. Verbitsky, M. Zhukovskii M. (2017) The Descriptive Complexity of Subgraph Isomorphism Without Numerics. In: Weil P. (eds) Computer Science – Theory and Applications. CSR 2017. Lecture Notes in Computer Science, vol 10304. Springer, Cham.

4 Published in 2016

- 1 M.E. Zhukovskii, A.D. Matushkin, “Universal Zero-One k -Law”, Mathematical Notes, 2016, Vol. 99, No. 4, 511–525.
- 2 M.E. Zhukovskii, A.E. Medvedeva, “When does zero-one k -law holds?”, Mathematical Notes, 2016, Vol. 99, No. 3, 342–349.
- 3 J.H. Spencer, M.E. Zhukovskii, “Bounded quantifier depth spectra for random graphs”, Discrete Mathematics, 2016, 339(6): 1651–1664.
- 4 M.E. Zhukovskii, L.B. Ostrovskii, “First-Order and Monadic Properties of Highly Sparse Random Graphs”, Doklady Mathematics, 2016, Vol. 94, No. 2, 555–557 (Original text: 2016, 470(5): 499–501).
- 5 M.E. Zhukovskii, “On infinite spectra of first order properties of random graphs”, Moscow Journal of Combinatorics and Number Theory, 2016, Vol. 6, No. 4, 73–102.

4.1 Published in 2015

- 1 J.H. Spencer, M.E. Zhukovskii, “On the spectra of first order language properties for random graphs”, Doklady Mathematics, 2015, 463(6): 642–645.
- 2 M.E. Zhukovskii, “On the zero-one 4-law for the Erdos–Renyi random graph”, Mathematical Notes, 2015, Vol. 97, No. 2, pp. 190–200 (Original Russian Text: M.E. Zhukovskii, 2014, published in Matematicheskie Zametki, 2015, Vol. 97, No. 2, pp. 203–216).
- 3 M.E. Zhukovskii, A.M. Raigorodskii, “Random graphs: models and limit properties”, Russian Mathematical Surveys, 2015, Vol. 70, No 1, pp. 35–88.
- 4 M.E. Zhukovskii, “On the maximal critical point in zero-one k -law”, Sbornik: Mathematics, 2015, Vol. 206, No. 4, pp. 13–34.
- 5 M.E. Zhukovskii, “On Limit Points of Spectra of the Random Graph First-Order Properties”, Doklady Mathematics, 2015, Vol. 92, No. 3, pp. 719–723.
- 6 M.E. Zhukovskii, “The spectra of first order formulae with small quantifier depth”, Russian Mathematical Surveys, 2015, Vol. 70, No. 6, 209–210.

4.2 Published in 2014

- 1 M.E. Zhukovskii, Extension of the zero-one k -law, Doklady Mathematics, January 2014, Volume 89, Issue 1, pp. 16–19 (Original Russian Text: M.E. Zhukovskii, 2014, published in Doklady Akademii Nauk, 2014, Vol. 454, No. 1, pp. 2326).
- 2 M.E. Zhukovskii, On the convergence of probabilities of the random graphs’ properties expressed by first-order formulas with a bounded quantifier depth, Moscow Journal of Combinatorics and Theory of Numbers, 2014, Vol. 4, No. 2, pp. 119–154.

5 Published in 2013

- 1 M.E. Zhukovskii, Extension of the Zero-one k -law, *Electronic Notes in Discrete Mathematics*, 2013, Volume 43, pp. 263-269.
- 2 M.E. Zhukovskii, The Law of Large Numbers for the Number of Active Particles in an Epidemic Model, *Theory Probab. Appl.*, 58(2), 297313, 2014 (Russian Original: 58(2), 2013, 235–254).

6 Published in 2012

- 1 M.E. Zhukovskii, Estimation of the number of maximal extensions in the random graph, *Discrete Mathematics and Applications*, 2012, 24(1): 79–107.
- 2 M.E. Zhukovskii, The Weak Zero-One Law for The Sequences of Random Distance Graphs, *Sbornik: Mathematics*, 203(7): 95-128, 2012.
- 3 M.E. Zhukovskii, On The Probability of Containing a Copy of a Fixed Graph by The Random Distance Graph, *Mathematical Notes*, 92(6): 844–855, 2012.
- 4 M.E. Zhukovskii, Zero-One k -Law, *Discrete Mathematics*, 2012, 312: 1670-1688.
- 5 M.E. Zhukovskii, Law of large numbers for the epidemic model, *Doklady Akademii Nauk*, 2012, 442(6): 736–739.

7 Published in 2011

- 1 M. E. Zhukovskii, Zero-One Laws for First-Order Formulas with a Bounded Quantifier Depth, *Doklady Mathematics*, Vol. 83, No. 1, pp. 8–11, 2011. (Russian original: *Doklady Akademii Nauk*, Vol. 436, No. 1, pp. 14-18, 2011).
- 2 M.E. Zhukovskii, On The Sequence of Random Distance Graphs That Satisfies Zero-One Law, *Problems of Information Transmission*, 2011, 47(3): 39-57.

8 Published in 2010

- 1 M.E. Zhukovskii, The Weak Zero-One Law for the Random Distance Graphs, *Theory of Probability and its applications*, Vol. 55, pp. 344-350, 2010.
- 2 M.E. Zhukovskii, The Weak Zero-One Laws for the Random Distance Graphs, *Doklady Mathematics*, Vol. 84, No. 1, pp. 51-54, 2010. (Russian original: *Doklady Akademii Nauk*, Vol. 430, No. 3, pp. 314-317, 2010).
- 3 M.E. Zhukovskii, The Weak “Zero-One” Law for the Random Distance Graphs, *Bulletin of Peoples’ Friendship University of Russia*, 2(1), pp. 11-25, 2010.

9 Published in conference abstracts (mathematics)

- 1 M.E. Zhukovskii, On the Weak Zero-One Laws for the Random Distance Graphs, Abstracts of the talks at the international conference Eurocomb 2009, Bordeaux, France, September, 2009.
- 2 M.E. Zhukovskii, The Weak Zero-One Law for the Sequences of Random Distance Graphs, Abstracts of the talks at the international conference Lomonosov 2010, Moscow, Russia, April, 2010.

- 3 M.E. Zhukovskii, The Weak Zero-One Law for the Random Distance Graphs, Abstracts of the talks at the international conference "X international seminar on Discrete Mathematics", Moscow, Russia, February, 2010.
- 4 M.E. Zhukovskii, On the Zero-One Laws and the Zero-One j -Laws for the Random Graphs, Abstracts of the talks at the 8th French Combinatorial Conference, Orsay, France, June, 2010.
- 5 M.E. Zhukovskii, Law of Large Numbers for the Epidemic Model, Abstracts to the talks at the international conference Lomonosov 2011, Moscow, Russia, April, 2011.
- 6 M.E. Zhukovskii, On 0-1 Laws for Random Graphs, Abstracts to the talks at the international conference on Infinite and finite sets, Budapest, Hungary, June, 2011.
- 7 M.E. Zhukovskii, On convergence of probabilities of first-order properties when zero-one k -law for random graphs doesn't hold, Abstracts to the talks at the 4th Polish Combinatorial Conference, Bedlewo, Poland, September, 2012.
- 8 M.E. Zhukovskii, On zero-one k -laws for the random graphs, Abstracts to the talks at the 55-th scientific conference in MIPT, Moscow, Russia, November, 2012.
- 9 M.E. Zhukovskii, On zero-one k -laws for the random graphs, Abstracts to the talks at the 56-th scientific conference in MIPT, Moscow, Russia, November, 2013.
- 10 M.E. Zhukovskii, Zero-one laws for $G(n, n^{-\alpha})$, Abstracts to the talks at Moscow Workshop on Combinatorics and Number Theory, Moscow, Russia, January–February, 2014.
- 11 M.E. Zhukovskii, Zero-one k -laws for $G(n, n^{-\alpha})$, Abstracts to the talks at Workshop on Extremal Graph Theory, Moscow, Russia, June, 2014.
- 12 M.E. Zhukovskii, Zero-one k -laws for small k , Abstracts to the talks at the International Conference Sum(m)it:240, Budapest, Hungary, July, 2014.
- 13 M.E. Zhukovskii, On the spectrum of a first-order property of the random graph, Abstracts to the talks at the 57-th scientific conference in MIPT, Moscow, Russia, November, 2014.
- 14 M.E. Zhukovskii, On infinite spectra of first-order properties, Abstracts to the talk at the Workshop on Logic and Random Graphs, Leiden, Netherlands, September, 2015.
- 15 M.E. Zhukovskii, First-order properties with infinite spectra, Abstracts to the talks at the 58-th scientific conference in MIPT, Moscow, Russia, November, 2015.
- 16 M.E. Zhukovskii, Random graphs: models and asymptotic characteristics, Abstracts to the talks at the international conference Net 2016, Nizhniy Novgorod, Russia, May, 2016.
- 17 M.E. Zhukovskii, First order properties with bounded quantifier depth for random graphs, Abstracts to the talks at the international conference PMDM 2016, Petrozavodsk, Russia, May–June, 2016.
- 18 M.E. Zhukovskii, First order and monadic second order logic of very sparse random graphs, Abstracts to the talks at the international conference BGW 2016, Bordeaux, France, November, 2016.
- 19 M.E. Zhukovskii, Probabilities of monadic second order properties of Erdős–Rényi random graph, Abstracts to the talks at the 59-th scientific conference in MIPT, Moscow, Russia, November, 2016.
- 20 O. Verbitsky, M. Zhukovskii, The Descriptive Complexity of Subgraph Isomorphism Without Numerics, CSR 2017: 308-322, Kazan, Russia, June, 2017.
- 21 M. Zhukovskii, Monotone convergence of the number of P_3 in $G(n, p)$, SPA 2017 (39th Conference on Stochastic Processes and Their Applications): 128-129, Moscow, Russia, July, 2017.

- 22 O. Verbitsky, M. Zhukovskii, On the First-Order Complexity of Induced Subgraph Isomorphism, CSL 2017 (26th EACSL Annual Conference on Computer Science Logic), pp. 40:1–40:16, Stockholm, Sweden, August 2017.
- 23 M.E. Zhukovskii, Existential monadic properties of the random graph, Abstracts to the talks at International Scientific Conference “Autumn mathematical readings in Adygea”, Maykop, Adygea, Russia, October, 2017.
- 24 M.E. Zhukovskii, On existential monadic properties of the binomial random graph, Abstracts to the talks at the 60-th scientific conference in MIPT, Moscow, Russia, November, 2017.

10 Published in conference abstracts (information retrieval and machine learning)

- 1 Maxim Zhukovskiy, Dmitry Vinogradov, Yuri Pritykin, Liudmila Ostroumova, Evgeny Grechnikov, Gleb Gusev, Pavel Serdyukov, Andrei Raigorodskii, Empirical validation of the buckley-osthus model for the web host graph: degree and edge distributions, CIKM 2012: 1577-1581, Maui, Hawaii, USA, 2012.
- 2 Maxim Zhukovskiy, Dmitry Vinogradov, Gleb Gusev, Pavel Serdyukov, Andrei Raigorodskii, Recency-sensitive model of web page authority, CIKM 2012: 2627-2630, Maui, Hawaii, USA, October-November 2012.
- 3 Maksim Zhukovskii, Gleb Gusev, Pavel Serdyukov, URL Redirection Accounting for Improving Link-Based Ranking Methods, ECIR 2013: 656-667, Moscow, Russia, 24th-27th March, 2013.
- 4 Maxim Zhukovskiy, Andrei Khropov, Gleb Gusev, and Pavel Serdyukov, Fresh BrowseRank, SIGIR 2013: 1029-1032, Dublin, Ireland, July, 2013.
- 5 Maxim Zhukovskiy, Andrei Khropov, Gleb Gusev, Pavel Serdyukov, Introducing search behavior into browsing based models of page’s importance, WWW (Companion Volume) 2013: 129-130, Rio de Janeiro, Brazil, 13th-17th May, 2013.
- 6 Maxim Zhukovskiy, Gleb Gusev, Pavel Serdyukov, Supervised Nested PageRank, CIKM 2014: 1059-1068, Shanghai, China, 2014.
- 7 Maxim Zhukovskiy, Tsimafei Khatkevich, Gleb Gusev, Pavel Serdyukov: An Optimization Framework for Propagation of Query-Document Features by Query Similarity Functions, CIKM 2015: 981-990, Melbourne, Australia, 2015.
- 8 Lev Bogolubsky, Pavel Dvurechensky, Alexander Gasnikov, Gleb Gusev, Yurii Nesterov, Andrei Raigorodskii, Aleksey Tikhonov, Maksim Zhukovskii: Learning Supervised PageRank with Gradient-Based and Gradient-Free Optimization Methods, NIPS 2016: 4907-4915, Spaine, Barcelona, 2016.