

Михаил Владимирович Волков
Head of Chair, Chief Researcher
Laboratory of Combinatorial Algebra
Laboratory of Combinatorial Algebra
Department of Algebra and Fundamental Informatics



Research interests

English language proficiency: C1

Supervisor's research interests:

In algebra, supervisor's research focuses on one of the major open problems on the edge between the semigroup theory and the universal algebra: Tarski's problem for finite semigroups. This fundamental problem reveals surprising connections to the modern computer science, in particular, to the complexity theory.

In computer science, supervisor's research is related to a longstanding conjecture in the theory of finite automata: the Černý conjecture. It deals with so-called synchronizing automata that are of both theoretical interest and practical value.

Supervisor's specific requirements to prospective PhD students:

For algebraic topics: basic knowledge of semi group theory, universal algebra, and computational complexity

For topics in automata theory: knowledge of some basics of automata theory, formal languages, and computational complexity

Programming skills will be an advantage.

Qualifications

Mathematics and Physics, Doctor, Higher Attestation Commission under the Ministry of Education and Science of Russian Federation

9 Dec 1994 → ...

21 May 1997 → ... Full Professor, Full Professor

Research outputs

1. Fernau, H., & Volkov, M. (2023). Preface of the Special Issue Dedicated to Selected Papers from CSR 2020. *Theory of Computing Systems*, 67(2), 219-220. <https://doi.org/10.1007/s00224-022-10115-7>
2. Azeef Muhammed, P. A., Volkov, M. V., & Auinger, K. (2023). Cross-connection structure of locally inverse semigroups. *International Journal of Algebra and Computation*, 33(01), 123-159. <https://doi.org/10.1142/S0218196723500091>
3. Volkov, M. V. (2023). Remark on the identities of the grammic monoid with three generators. *Semigroup Forum*, 106(1), 332-337. <https://doi.org/10.1007/s00233-022-10323-0>
4. Casas, D., & Volkov, M. V. (2022). Binary Completely Reachable Automata. In *LATIN 2022: Theoretical Informatics: Book Series* (Vol. 13568 LNCS, pp. 345-358). [Chapter 21] (LATIN 2022: Theoretical Informatics; Vol. 13568). Springer. https://doi.org/10.1007/978-3-031-20624-5_21
5. Shabana, H., & Volkov, M. V. (2022). Careful synchronization of partial deterministic finite automata. *Acta Informatica*, 59(4), 479-504. <https://doi.org/10.1007/s00236-022-00433-1>
6. Volkov, M. V. (2022). Identities of the stylic monoid. *Semigroup Forum*, 105(1), 345-349. <https://doi.org/10.1007/s00233-022-10305-2>
7. Azeef Muhammed, P. A., & Volkov, M. V. (2022). A tale of two categories: Inductive groupoids and cross-connections. *Journal of Pure and Applied Algebra*, 226(7), [106940]. <https://doi.org/10.1016/j.jpaa.2021.106940>
8. Volkov, M. (2022). Editorial Note. *Semigroup Forum*, 104(2), 517. <https://doi.org/10.1007/s00233-022-10251-z>
9. Diekert, V., & Volkov, M. (2022). Preface. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 13257 LNCS, v-vi.
10. Volkov, M. V. (2021). Semiring identities of the Brandt monoid. *Algebra Universalis*, 82(3), [42]. <https://doi.org/10.1007/s00012-021-00731-8>
11. Gaysin, A. M., & Volkov, M. V. (2021). Block-Groups and Hall Relations. In P. G. Romeo, M. V. Volkov, & A. R. Rajan (Eds.), *Semigroups, Categories, and Partial Algebras - ICSAA 2019* (pp. 25-32). (Springer Proceedings in Mathematics and Statistics; Vol. 345). Springer Verlag. https://doi.org/10.1007/978-981-33-4842-4_3
12. Romeo, P. G., Volkov, M. V., & Rajan, A. R. (2021). Preface. *Springer Proceedings in Mathematics and Statistics*, 345, vii-viii. <https://doi.org/10.1017/CBO9780511780578.001>

13. Chen, Y., Hu, X., Kitov, N. V., Luo, Y., & Volkov, M. V. (2020). Identities of the Kauffman monoid. *Communications in Algebra*, 48(5), 1956-1968. <https://doi.org/10.1080/00927872.2019.1710164>
14. Kitov, N. V., & Volkov, M. V. (2020). Identities of the kauffman monoid K_4 and of the Jones Monoid J_4 . In *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* (pp. 156-178). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 12180 LNCS). Springer Verlag. https://doi.org/10.1007/978-3-030-48006-6_12
15. Fernau, H., Gusev, V. V., Hoffmann, S., Holzer, M., Volkov, M. V., & Wolf, P. (2019). Computational complexity of synchronization under regular constraints. In J-P. Katoen, P. Heggernes, & P. Rossmanith (Eds.), *44th International Symposium on Mathematical Foundations of Computer Science, MFCS 2019* [63] (Leibniz International Proceedings in Informatics, LIPIcs; Vol. 138). Schloss Dagstuhl- Leibniz-Zentrum fur Informatik GmbH, Dagstuhl Publishing. <https://doi.org/10.4230/LIPIcs.MFCS.2019.63>
16. Volkov, M. V. (2019). The identities of the free product of a pair of two-element monoids. *Algebra Universalis*, 80(1), [14]. <https://doi.org/10.1007/s00012-019-0587-3>
17. Muhammed, P. A. A., & Volkov, M. V. (2019). Inductive groupoids and cross-connections of regular semigroups. *Acta Mathematica Hungarica*, 157(1), 80-120. <https://doi.org/10.1007/s10474-018-0888-6>
18. Volkov, M. V. (2019). Identities in brandt semigroups, revisited. *Ural Mathematical Journal*, 5(2), 80-93. <https://doi.org/10.15826/umj.2019.2.008>
19. Gonze, F., Gusev, V. V., Jungers, R. M., Gerencsér, B., & Volkov, M. V. (2019). On the Interplay Between Cerny and Babai's Conjectures. *International Journal of Foundations of Computer Science*, 30(1), 93-114. <https://doi.org/10.1142/S0129054119400057>
20. Volkov, M. V. (2019). Slowly synchronizing automata with idempotent letters of low rank. *Journal of Automata, Languages and Combinatorics*, 24(2-4), 375-386.
21. Shabana, H., & Volkov, M. V. (2019). Using Sat Solvers for Synchronization Issues in Partial Deterministic Automata. In I. Bykadorov, V. Strusevich, & T. Tchemisova (Eds.), *Mathematical Optimization Theory and Operations Research - 18th International Conference, MOTOR 2019, Revised Selected Papers* (pp. 103-118). (Communications in Computer and Information Science; Vol. 1090 CCIS). Springer. https://doi.org/10.1007/978-3-030-33394-2_9
22. Volkov, M. V., Silva, P. V., & Soares, F. (2018). Local finiteness for Green's relations in semigroup varieties. *Communications in Algebra*, 46(11), 4625-4653. <https://doi.org/10.1080/00927872.2018.1448850>
23. Bondar, E. A., & Volkov, M. V. (2018). A Characterization of Completely Reachable Automata. In *Developments in Language Theory - 22nd International Conference, DLT 2018, Proceedings* (pp. 145-155). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 11088 LNCS). Springer Verlag. https://doi.org/10.1007/978-3-319-98654-8_12
24. Volkov, M. V., & Shabana, H. (2018). Using sat solvers for synchronization issues in non-deterministic automata. *Siberian Electronic Mathematical Reports*, 15, 1426-1442. <https://doi.org/10.17377/semi.2018.15.117>
25. Shneerson, L. M., & Volkov, M. V. (2017). The identities of the free product of two trivial semigroups. *Semigroup Forum*, 95(1), 245-250. <https://doi.org/10.1007/s00233-016-9815-8>
26. Gonze, F., Gusev, V. V., Gerencsér, B., Jungers, R. M., & Volkov, M. V. (2017). On the interplay between babai and Černý's conjectures. In *Developments in Language Theory - 21st International Conference, DLT 2017, Proceedings* (Vol. 10396 LNCS, pp. 185-197). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 10396 LNCS). Springer Verlag. https://doi.org/10.1007/978-3-319-62809-7_13
27. Нагребецкая, Ю. В., Перминова, О. Е., & Волков, М. В. (Ed.) (2017). *Дифференциальная геометрия: практикум*. Издательство Уральского университета. <http://hdl.handle.net/10995/52394>
28. Bondar, E. A., & Volkov, M. V. (2016). Completely reachable automata. In *Descriptive Complexity of Formal Systems - 18th IFIP WG 1.2 International Conference, DCFS 2016, Proceedings* (Vol. 9777, pp. 1-17). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 9777). Springer Verlag. https://doi.org/10.1007/978-3-319-41114-9_1
29. Ashikhmin, D. N., Volkov, M. V., & Zhang, W. T. (2015). The finite basis problem for Kiselman monoids. *Demonstratio Mathematica*, 48(4), 475-492. <https://doi.org/10.1515/dema-2015-0035>
30. Auinger, K., Chen, Y., Hu, X., Luo, Y., & Volkov, M. V. (2015). The finite basis problem for Kauffman monoids. *Algebra Universalis*, 74(3-4), 333-350. <https://doi.org/10.1007/s00012-015-0356-x>
31. Volkov, M. V. (2015). A nonfinitely based semigroup of triangular matrices. In *Semigroups, Algebras and Operator Theory, 2014* (Vol. 142, pp. 27-38). Springer New York LLC. https://doi.org/10.1007/978-81-322-2488-4_2
32. Auinger, K., Dolinka, I., Pervukhina, T. V., & Volkov, M. V. (2014). Unary enhancements of inherently non-finitely based semigroups. *Semigroup Forum*, 89(1), 41-51. <https://doi.org/10.1007/s00233-013-9509-4>
33. Fominykh, F. M., Martyugin, P. V., & Volkov, M. V. (2013). P(L)AYING FOR SYNCHRONIZATION. *International Journal of Foundations of Computer Science*, 24(6), 765-780. <https://doi.org/10.1142/S0129054113400170>

34. Ananichev, D. S., Volkov, M. V., & Gusev, V. V. (2013). Primitive digraphs with large exponents and slowly synchronizing automata. *Journal of Mathematical Sciences (United States)*, 192(3), 263-278. <https://doi.org/10.1007/s10958-013-1392-8>
35. Auinger, K., Dolinka, I., & Volkov, M. V. (2012). Equational theories of semigroups with involution. *Journal of Algebra*, 369, 203-225. <https://doi.org/10.1016/j.jalgebra.2012.06.021>
36. Auinger, K., Dolinka, I., & Volkov, M. V. (2012). Matrix identities involving multiplication and transposition. *Journal of the European Mathematical Society*, 14(3), 937-969. <https://doi.org/10.4171/JEMS/323>
37. Fominykh, F., & Volkov, M. (2012). P(l)aying for synchronization. In *Implementation and Application of Automata - 17th International Conference, CIAA 2012, Proceedings* (Vol. 7381 LNCS, pp. 159-170). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 7381 LNCS). https://doi.org/10.1007/978-3-642-31606-7_14
38. Volkov, M. V., Goldberg, S. V., & Kublanovsky, S. I. (2011). A minimal nonfinitely based semigroup whose variety is polynomially recognizable. *Journal of Mathematical Sciences*, 177(6), 847-859. <https://doi.org/10.1007/s10958-011-0512-6>
39. Lee, E. W. H., & Volkov, M. V. (2011). Limit varieties generated by completely 0-simple semigroups. *International Journal of Algebra and Computation*, 21(1-2), 257-294. <https://doi.org/10.1142/S0218196711006169>
40. Fernandes, V. H., & Volkov, M. V. (2010). On divisors of semigroups of order-preserving mappings of a finite chain. *Semigroup Forum*, 81(3), 551-554. <https://doi.org/10.1007/s00233-010-9257-7>
41. Ananichev, D., Gusev, V., & Volkov, M. (2010). Slowly synchronizing automata and digraphs. In *Mathematical Foundations of Computer Science 2010 - 35th International Symposium, MFCS 2010, Proceedings* (pp. 55-65). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 6281 LNCS). https://doi.org/10.1007/978-3-642-15155-2_7
42. Jackson, M., & Volkov, M. (2010). The algebra of adjacency patterns: Rees matrix semigroups with reversion. In *Fields of Logic and Computation - Essays Dedicated to Yuri Gurevich on the Occasion of His 70th Birthday* (pp. 414-443). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 6300 LNCS). https://doi.org/10.1007/978-3-642-15025-8_20
43. Easdown, D., Sapir, M. V., & Volkov, M. V. (2010). Periodic elements of the free idempotent generated semigroup on a biordered set. *International Journal of Algebra and Computation*, 20(2), 189-194. <https://doi.org/10.1142/S0218196710005583>
44. Almeida, J., Margolis, S., Steinberg, B., & Volkov, M. (2010). Characterization of group radicals with an application to mal'cev products. *Illinois Journal of Mathematics*, 54(1), 199-221. <https://doi.org/10.1214/10-AAP262>
45. Jackson, M., & Volkov, M. (2009). Undecidable problems for completely 0-simple semigroups. *Journal of Pure and Applied Algebra*, 213(10), 1961-1978. <https://doi.org/10.1016/j.jpaa.2009.02.011>
46. Volkov, M. V. (2009). Synchronizing automata preserving a chain of partial orders. *Theoretical Computer Science*, 410(37), 3513-3519. <https://doi.org/10.1016/j.tcs.2009.03.021>
47. Mikhailova, I. A., & Volkov, M. V. (2009). Pattern avoidance by palindromes. *Theoretical Computer Science*, 410(30-32), 2992-2998. <https://doi.org/10.1016/j.tcs.2009.01.037>
48. Almeida, J., Volkov, M. V., & Goldberg, S. V. (2009). Complexity of the identity checking problem for finite semigroups. *Journal of Mathematical Sciences*, 158(5), 605-614. <https://doi.org/10.1007/s10958-009-9397-z>
49. Jackson, M., & Volkov, M. (2009). Relatively inherently nonfinitely Q-based semigroups. *Transactions of the American Mathematical Society*, 361(4), 2181-2206. <https://doi.org/10.1090/S0002-9947-08-04798-3>
50. Almeida, J., Margolis, S., Volkov, M., & Steinberg, B. (2009). Representation theory of finite semigroups, semigroup radicals and formal language theory. *Transactions of the American Mathematical Society*, 361(3), 1429-1461.
51. Volkov, M. V. (2008). Synchronizing automata and the Černý conjecture. In *Language and Automata Theory and Applications - Second International Conference, LATA 2008, Revised Papers* (pp. 11-27). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 5196 LNCS). https://doi.org/10.1007/978-3-540-88282-4_4
52. Volkov, M. V. (2008). Lev Naumovich Shevrin: Fifty years in the service of mathematics. *Semigroup Forum*, 76(2), 185-191. <https://doi.org/10.1007/s00233-007-9035-3>
53. Volkov, M. V. (2007). Synchronizing automata preserving a chain of partial orders. In *Implementation and Application of Automata - 12th International Conference, CIAA 2007, Revised Selected Papers* (pp. 27-37). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 4783 LNCS).
54. Ananichev, D. S., Volkov, M. V., & Zaks, Y. I. (2007). Synchronizing automata with a letter of deficiency 2. *Theoretical Computer Science*, 376(1-2), 30-41. <https://doi.org/10.1016/j.tcs.2007.01.010>
55. Ananichev, D. S., Petrov, I. V., & Volkov, M. V. (2006). Collapsing words: A progress report. *International Journal of Foundations of Computer Science*, 17(3), 507-518. <https://doi.org/10.1142/S0129054106003966>
56. Pastijn, F., & Volkov, M. V. (2006). D-compatible semigroup varieties. *Journal of Algebra*, 299(1), 62-93. <https://doi.org/10.1016/j.jalgebra.2006.02.033>

57. Pastijn, F., & Volkov, M. V. (2006). Cryptic semigroup varieties. *Semigroup Forum*, 72(2), 159-189. <https://doi.org/10.1007/s00233-005-0550-9>
58. Almeida, J., & Volkov, M. V. (2006). Subword complexity of profinite words and subgroups of free profinite semigroups. *International Journal of Algebra and Computation*, 16(2), 221-258. <https://doi.org/10.1142/S0218196706002883>
59. Ananichev, D. S., Volkov, M. V., & Zaks, Y. I. (2006). Synchronizing automata with a letter of deficiency 2. In *Developments in Language Theory - 10th International Conference, DLT 2006, Proceedings* (pp. 433-442). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 4036 LNCS). Springer Verlag. https://doi.org/10.1007/11779148_39
60. Ananichev, D. S., Petrov, I. V., & Volkov, M. V. (2005). Collapsing words: A progress report. *Lecture Notes in Computer Science*, 3572, 11-21.
61. Volkov, M. V., & Tanana, G. V. (2005). On sums of radical and regular rings. *Journal of Mathematical Sciences*, 128(6), 3378-3380. <https://doi.org/10.1007/s10958-005-0275-z>
62. Ananichev, D. S., & Volkov, M. V. (2005). Synchronizing generalized monotonic automata. *Theoretical Computer Science*, 330(1), 3-13. <https://doi.org/10.1016/j.tcs.2004.09.006>
63. Almeida, J., Margolis, S., & Volkov, M. V. (2005). The pseudovariety of semigroups of triangular matrices over a finite field. *RAIRO - Theoretical Informatics and Applications*, 39(1), 31-48. <https://doi.org/10.1051/ita:2005002>
64. Margolis, S., Pin, J-E., & Volkov, M. V. (2004). Words guaranteeing minimum image. *International Journal of Foundations of Computer Science*, 15(2), 259-276. <https://doi.org/10.1142/S0129054104002406>
65. Ananichev, D. S., & Volkov, M. V. (2004). Synchronizing monotonic automata. *Theoretical Computer Science*, 327(3), 225-239. <https://doi.org/10.1016/j.tcs.2004.03.068>
66. Volkov, M. V. (2004). Reflexive relations, extensive transformations and piecewise testable languages of a given height. *International Journal of Algebra and Computation*, 14(5-6), 817-827.
67. Volkov, M. V. (2004). Checking quasi-identities in a finite semigroup may be computationally hard. *Studia Logica*, 78(1-2), 349-356. <https://doi.org/10.1007/s11225-005-0356-5>
68. Ananichev, D. S., & Volkov, M. V. (2004). Some results on cerny type problems for transformation semigroups. In IM. Araujo, M.J.J. Branco, V.H. Fernandes, & GMS. Gomes (Eds.), *SEMIGROUPS AND LANGUAGES* (pp. 23-42). World Scientific Publishing Co.. https://doi.org/10.1142/9789812702616_0002
69. Ananichev, D. S., & Volkov, M. V. (2003). Synchronizing monotonic automata. *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 2710, 111-121.
70. Ananichev, D. S., Cherubini, A., & Volkov, M. V. (2003). Image reducing words and subgroups of free groups. *Theoretical Computer Science*, 307(1 SPEC.), 77-92. [https://doi.org/10.1016/S0304-3975\(03\)00093-8](https://doi.org/10.1016/S0304-3975(03)00093-8)
71. Cowan, D. F., Reilly, N. R., Trotter, P. G., & Volkov, M. V. (2003). The finite basis problem for quasivarieties and pseudovarieties generated by regular semigroups I. Quasivarieties generated by regular semigroups. *Journal of Algebra*, 267(2), 635-653. [https://doi.org/10.1016/S0021-8693\(03\)00394-6](https://doi.org/10.1016/S0021-8693(03)00394-6)
72. Almeida, J., & Volkov, M. V. (2003). PROFINITE IDENTITIES FOR FINITE SEMIGROUPS WHOSE SUBGROUPS BELONG TO A GIVEN PSEUDO-VARIETY. *Journal of Algebra and its Applications*, 2(2), 137-163. <https://doi.org/10.1142/S0219498803000519>
73. Volkov, M. V., & Gol'dberg, I. A. (2003). Identities of Semigroups of Triangular Matrices over Finite Fields. *Mathematical Notes*, 73(3-4), 474-481. <https://doi.org/10.1023/A:1023298919061>
74. Ananichev, D. S., Volkov, M. V., & Cherubini, A. (2003). An inverse automata algorithm for recognizing 2-collapsing words. In *Developments in Language Theory - 6th International Conference, DLT 2002, Revised Papers* (pp. 270-282). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 2450). Springer Verlag.
75. Ananichev, D. S., & Volkov, M. V. (2002). Collapsing words vs. synchronizing words. In *Developments in Language Theory - 5th International Conference, DLT 2001, Revised Papers* (pp. 166-174). (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); Vol. 2295 LNCS).
76. Volkov, M. V. (2002). Some open problems concerning relatively free and free profinite semigroups. *Semigroup Forum*, 64(2), 224-235. <https://doi.org/10.1007/s002330010101>
77. Almeida, J., Higgins, P. M., & Volkov, M. V. (2001). The gap between partial and full: An addendum. *International Journal of Algebra and Computation*, 11(1), 131-135. <https://doi.org/10.1142/S0218196701000437>
78. Volkov, M. V. (2001). Decidability of finite quasivarieties generated by certain transformation semigroups. *Algebra Universalis*, 46(1-2), 97-103. <https://doi.org/10.1007/PL00000349>
79. Repnitskiĭ, V. B., & Volkov, M. V. (1998). The finite basis problem for pseudovariety script O sign. *Royal Society of Edinburgh - Proceedings A*, 128(3), 661-669. <https://doi.org/10.1017/S0308210500021673>
80. Almeida, J., & Volkov, M. V. (1998). The gap between partial and full. *International Journal of Algebra and Computation*, 8(3), 399-430. <https://doi.org/10.1142/S0218196798000193>

81. Ananichev, D. S., & Volkov, M. V. (1998). Varieties of solvable lie rings of finite width. *Mathematical Notes*, 63(5-6), 569-574. <https://doi.org/10.1007/BF02312835>
82. Pastijn, F., & Volkov, M. V. (1996). Minimal noncryptic e-varieties of regular semigroups. *Journal of Algebra*, 184(3), 881-896. <https://doi.org/10.1006/jabr.1996.0289>
83. Trotter, P. G., & Volkov, MV. (1996). The finite basis problem in the pseudovariety joins of aperiodic semigroups with groups. *Semigroup Forum*, 52(1), 83-91. <https://doi.org/10.1007/BF02574083>
84. Volkov, M. V., & Silkin, N. N. (1995). Associatively amalgamatable varieties of rings. *Mathematical Notes*, 57(2), 141-147. <https://doi.org/10.1007/BF02309146>
85. Sapir, M. V., & Volkov, M. V. (1994). On the joins of semigroup varieties with the variety of commutative semigroups. *Proceedings of the American Mathematical Society*, 120(2), 345-348. <https://doi.org/10.1090/S0002-9939-1994-1185274-1>
86. Volkov, M. V. (1992). SEMIGROUP VARIETIES WITH MODULAR SUBVARIETY LATTICE. *Doklady Akademii Nauk*, 326(3), 409-413.
87. Volkov, M. V. (1990). A general finite basis condition for systems of semigroup identities. *Semigroup Forum*, 41(1), 181-191. <https://doi.org/10.1007/BF02573389>
88. Vovsi, S. M., & Volkov, M. V. (1990). On multilinear identities of group representations. *Communications in Algebra*, 18(2), 389-401. <https://doi.org/10.1080/00927879008823920>
89. Volkov, M. V. (1989). The finite basis question for varieties of semigroups. *Mathematical Notes of the Academy of Sciences of the USSR*, 45(3), 187-194. <https://doi.org/10.1007/BF01158553>
90. Volkov, M. V. (1986). Identities in lattices of ring varieties. *Algebra Universalis*, 23(1), 32-43. <https://doi.org/10.1007/BF01190909>
91. Volkov, M. V. (1984). Finite basis theorem for systems of semigroup identities. *Semigroup Forum*, 28(1), 93-99. <https://doi.org/10.1007/BF02572476>
92. Volkov, M. V. (1983). Varieties of associative rings with the property of embeddability of amalgams. *Mathematical Notes of the Academy of Sciences of the USSR*, 33(1), 3-7. <https://doi.org/10.1007/BF01141190>
93. Volkov, M. V. (1983). SEPARATION OF THE RADICAL IN RING VARIETIES. *Acta Scientiarum Mathematicarum*, 46(1-4), 73-75.
94. Volkov, M. V. (1982). An example of a limit variety of semigroups. *Semigroup Forum*, 24(1), 319-326. <https://doi.org/10.1007/BF02572775>
95. Volkov, M. V. (1981). FINITENESS OF A BASIS OF IDENTITIES OF SOME ASSOCIATIVE-RINGS. *Siberian Mathematical Journal*, 22(4), 545-551.

Projects

Semigroups and related algebraic systems

Шеврин, Л. Н., Гусев, С. В., Шапрынский, В. Ю., Скоков, Д. В., Верников, Б. М., Финогенова, О. Б., Волков, М. В., Бондарь, Е. А., Михайлова, И. А. & Овсянников, А. Я.
01/01/2017 → 31/12/2019

Алгоритмика и комбинаторика символьных последовательностей и конечных автоматов

Волков, М. В.
01/01/2016 → 31/12/2018

Вновь создаваемый ключевой центр превосходства «Научно-образовательный математический центр» (Проект развития САЕ ИЕНИМ)

Маслова, Н. В., Асанов, М. О., Шеврин, Л. Н., Добросердова, А. Б., Шушпанов, М. П., Попович, А. Л., Верников, Б. М., Гусев, С. В., Волков, М. В., Шур, А. М., Осипов, А. В., Бабенко, А. Г., Гомоюнов, М. И., Юферева, О. О., Махнев, А. А., Хачай, О. Ю., Акопян, Р. Р., Верников, Б. М., Авербух, Ю. В., Баранский, В. А., Белоусов, И. Н., Зенков, В. И., Зиновьева, М. Р., Осипов, А. В., Паюченко, Н. С. & Сеньчонок, Т. А.
19/07/2017 → ...

Выполнение плана мероприятий по развитию математического образования и финансовой поддержки деятельности федерального профессора в области математики

Волков, М. В.
01/01/2017 → 31/12/2020

Комбинаторные модели в компьютерных науках и их приложениях

Волков, М. В.

01/01/2017 → 31/12/2019

Математические аспекты фундаментальной информатики

Волков, М. В., Ананичев, Д. С., Берлинков, М. В., Булатов, А. А., Гамзова, Ю. В., Глазырин, Н. Ю., Гусев, В. В., Косолюбов, Д. А., Крохин, А. А., Мартюгин, П. В., Масленникова, М. И., Мелентьев, А. А., Михайлова, И. А., Петрова, Е. А., Плющенко, А. Н., Прибавкина, Е. В., Рубинчик, М. В., Скворцов, Е. С., Хворост, А. А., Шур, А. М., Пупырев, С. Н., Незнахина, Е. Д., Шушпанов, М. П., Гейн, А. А., Прохорова, М. Ф., Ли, Э. В. Х., Осипов, В. В., Шабана, Х. М. Д., Браславский, П. И., Гейн, А. Г., Кобякова, Н. Н. & Форгани, М.

03/12/2013 → ...

Многообразия аддитивно идемпотентных полуколец: конечная аксиоматизируемость и решетки подмногообразий

Волков, М. В.

01/01/2022 → 31/12/2023

Синхронизация конечных атомов

Волков, М. В.

07/11/2019 → 31/08/2020

Структурные, эквациональные и комбинаторные аспекты теории алгебраических систем и их приложения в компьютерных науках

Волков, М. В.

01/01/2020 → 31/12/2022

Финансовая поддержка деятельности федерального профессора в области математики

Волков, М. В.

01/01/2017 → 31/12/2020

Prizes

Знак отличия «За заслуги перед Свердловской областью» III степени, 2020

Бартоломей, Петр Иванович (Recipient), Волков, Михаил Владимирович (Recipient), Иванов, Алексей Олегович (Recipient), Кружаев, Владимир Венедиктович (Recipient) & Попов, Артемий Александрович (Recipient), 2020

Победитель конкурса РФФИ «Экспансия» в секции «естественные и технические науки», 2019

Волков, Михаил Владимирович (Recipient), Чупахин, Олег Николаевич (Recipient), Бажукова, Ирина Николаевна (Recipient), Мартюшев, Леонид Михайлович (Recipient) & Ремпель, Андрей Андреевич (Recipient), 2019

Член Финской академии наук и литературы, 2017

Волков, Михаил Владимирович (Recipient), 2017

Press/Media

'It Felt Great to Study at UrFU' - a Egyptian PhD Graduate

Hanan Maghdi Darvish Shabana & Mikhail Volkov

20/07/2020

1 Media contribution

В вузе сложилась одна из мировых научных школ

Лев Наумович Шеврин & Михаил Владимирович Волков

01/04/2022

1 Media contribution

В вузе создадут обзор новейших достижений в области синхронизации конечных автоматов

Михаил Владимирович Волков, Михаил Владимирович Берлинков & Павел Сергеевич Агеев

06/12/2019

1 Media contribution

Воспитанники вузовского лицея завоевали пять медалей на конкурсе «Перспектива»

Михаил Владимирович Волков & Денис Александрович Рогожников

07/06/2021

1 Media contribution

Вуз улучшил показатели в рейтинге открытости вузов по версии Webometrics

Андрей Леонидович Холкин, Владимир Яковлевич Шур, Эльвира Эвальдовна Сыманюк, Вячеслав Яковлевич Сосновских, Гарольд Ефимович Зборовский, Михаил Владимирович Волков, Наталия Александровна Купина & Владимир Дмитриевич Селезнев

18/07/2017

1 Media contribution

Десять ученых вуза получают гранты РФФИ

Людмила Григорьевна БАБЕНКО, Елена Михайловна Главацкая, Наталья Вадимовна Веселкова, Гарольд Ефимович Зборовский, Михаил Владимирович Волков, Олег Николаевич Чупахин, Ирина Николаевна Бажукова, Леонид Михайлович Мартюшев, Андрей Андреевич Ремпель & Андрей Леонидович Холкин

06/11/2019

1 Media contribution

Иностранные специалисты примут участие в работе Уральского математического центра

Михаил Владимирович Волков, Алексей Олегович Иванов & Николай Юрьевич Лукоянов

19/07/2019

1 Media contribution

Профессор УрФУ стал шестым россиянином, принятым в Финскую академию наук и литературы

Михаил Владимирович Волков

14/09/2017

1 Media contribution

Пять сотрудников вуза отмечены за заслуги перед Свердловской областью

Петр Иванович Бартоломей, Михаил Владимирович Волков, Алексей Олегович Иванов, Владимир Венедиктович Кружаев & Артемий Александрович Попов

16/10/2020

1 Media contribution

Ученые университета вновь включили вуз в десятку лучших в России

Владимир Яковлевич Шур, Вячеслав Яковлевич Сосновских, Эльвира Эвальдовна Сыманюк, Михаил Владимирович Волков, Владимир Дмитриевич Селезнев, Алексей Олегович Иванов, Гарольд Ефимович Зборовский & Василий Алексеевич Бакулев

01/02/2017

1 Media contribution

Ханан Магди Дарвиш Шабана: «Мне было очень приятно учиться в УрФУ»

Ханан Магди Дарвиш Шабана & Михаил Владимирович Волков

18/07/2020

1 Media contribution