

# Curriculum Vitae

## Sergey Kitaev

Born: January 1, 1975, Ulan-Ude, Russia  
Marital Status: married to Daria Kitaeva  
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### Employment

- **Reader**, University of Strathclyde, Glasgow, Scotland, from *January 2011*
- **Associate Professor of Mathematics**, Reykjavík University, Reykjavík, Iceland, *June 2006 – July 2011*
- **Assistant Professor of Mathematics**, Reykjavík University, Reykjavík, Iceland, *July 2005 – May 2006*
- **Visiting Assistant Professor**, University of California, San Diego, USA, *Spring Quarter 2005*
- **Visiting Assistant Professor**, University of Kentucky, Lexington, USA, *August 2003 – December 2004*
- **Lecturer**, Göteborg University, Göteborg, Sweden, *2003*
- **Researcher** (part time job), Sobolev Institute of Mathematics, Novosibirsk, Russia, *1998 – 2002*

### Short- and long-term visits

- Universitat Politecnica de Catalunya, Barcelona, Spain, Visiting Scholar, *June–December 2010*
- Jagiellonian University in Krakow, Krakow, Poland, *February 2010*
- University of California, San Diego, Visiting Scholar, *January 2010*
- Sobolev Institute of Mathematics, Novosibirsk, Russia, Visiting Scholar, *April–July 2009*
- University of California, San Diego, Visiting Associate Professor, *Winter Quarter 2009*
- University of St Andrews, Scotland, Visiting Scholar, *October 2007*
- University of California, San Diego, Visiting Scholar, *November 2006*
- Mittag-Leffler Institute, The Royal Swedish Academy of Sciences, Stockholm, Sweden, Visiting Scholar, Program in Algebraic Combinatorics, *January – March 2005*

### Education

- **PhD in Mathematics**, Göteborg University, *January 2003*; “Generalized patterns in words and permutations”; Advisor: Einar Steingrímsson.

- **Licentiatexamen in Mathematics**, Göteborg University, *December 2000*; “Symbolic Sequences, Crucial Words and Iterations of a Morphism”; Advisor: Einar Steingrímsson.
- **M.Sc. in Applied Mathematics and Informatics**, Novosibirsk State University, *June 1998*; “Crucial words for some sets of prohibitions”; Advisor: Alexander Evdokimov.
- **B.Sc. in Mathematics** (A Diploma), Novosibirsk State University, *June 1996*; “Deadlock words for sets of prohibitions”; Advisor: Alexander Evdokimov.

### Research interests

Enumerative and algebraic combinatorics, combinatorics on words, discrete analysis, graph theory, formal languages

### Referee work for 16 journals

Advances in Applied Mathematics, Annals of Combinatorics, Ars Combinatoria, Australasian Journal of Combinatorics, Discrete Applied Mathematics, Discrete Mathematics, Electronic Journal of Combinatorics, European Journal of Combinatorics, INTEGERS: The Electronic Journal of Combinatorial Number Theory, Journal of Algebraic Combinatorics, Journal of Combinatorial Theory – Series A, Journal of Mathematical Analysis and Applications, Journal of Mathematical Modelling and Algorithms, Pure Mathematics and Applications, Seminaire Lotharingien de Combinatoire, Theoretical Computer Science

### Students

- Alexander Valyuzhenich (co-advisor: Sergey Avgustinovich), Novosibirsk State University, M.Sc. in Mathematics, expected June 2012.
- Hilmar Haukur Gudmundsson, (co-advisor: Einar Steingrímsson), Reykjavik University, M.Sc. in Mathematics, Spring 2009
- Alexander Valyuzhenich (co-advisor: Anna Frid), Novosibirsk State University, B.Sc. in Mathematics, June 2010.
- Signy Olafsdottir, Reykjavik University, B.Sc. in Mathematics, June 2010.

### Postdoctoral mentor for

Amy Glen (2008–2009), Vit Jelinek (2009–2010), Pavel Salimov (2011), Chris Severs (2011), Henning Úlfarsson (2010–2011)

### Research and administrative related activities

- Member of the editorial board of the *Open Journal of Discrete Mathematics (OJDM)*
- Reviewer for *Math Reviews* (32 reviews)
- Financial director of the *Mathematics Institute* at Reykjavík University (2009–2010)
- Member of the Graduate Studies Council at Reykjavík University (2009–2010)
- Member of the *Strathclyde Combinatorics Group*
- Member of *Icelandic Center of Excellence in Theoretical Computer Science (ICE-TCS)*

- A primary contact in a formal agreement on cooperation between the *Department of Mathematics* at the University of California, San Diego and the *Mathematics Institute*, Reykjavik University (2009–2014)
- Development from scratch (together with Einar Steingrímsson) the Masters program in mathematics education at Reykjavik University (2005–2008)
- Development from scratch (together with Einar Steingrímsson and Pawel Bartoszek) the B.Sc. program in mathematics at Reykjavik University (2006–2008)
- Chairman of the organizing committee, *the 10th Nordic Combinatorial Conference* (2010)
- Member of the organizing committee, *Permutation Patterns* (2006)
- Member of the organizing committee, *Formal Power Series and Algebraic Combinatorics* (2011)
- Chairman of the evaluation committee of promotion of Dr. Sigurdur Hafstein to an associate professor position at Reykjavik University (2007)
- Member of the hiring committee for two postdoc positions (2008)
- Member of the hiring committee for three postdoc positions (2009)
- Member of the hiring committee for two postdoc positions (2010)
- Training the Icelandic National Mathematics Olympiad Team (2007, 2008)
- Development of a course in Combinatorics for gifted children in cooperation with Ad Astra (2007)

## Honors

- The paper “(2+2)-free posets, ascent sequences and pattern avoiding permutations, *J. Combin. Theory, Ser. A* **117**, Issue 7 (2010), 884-909”(co-authored with Mireille Bousquet-Melou, Anders Claesson and Mark Dukes) is named among top 25 hottest articles in *Journal of Combinatorial Theory, Series A* in April–June 2010.
- Recipient of a grant “Abel Extraordinary chair” (39.800 Euro) from Universidad Computense de Madrid, Spain, for 6 month research stay in Universitat Politecnica de Catalunya, 2010.
- Co-recipient of a Grant for Excellence (600.000 USD), Iceland Science Fund., 2009.
- The paper “Introduction to partially ordered patterns, *Disc. App. Math.* **155**, Issue 8, 1 (2007), 929–944” is named among top 25 hottest articles in *Discrete Applied Mathematics* in April–June 2007.
- Co-recipient of a Grant for Excellence (300.000 USD), Iceland Science Fund., 2006.
- AXΩ professor of the week, University of California, San Diego, May 2005.
- Research grant, The Royal Swedish Academy of Sciences, 2003.
- Research grant, Stiftelsen Wilhelm och Martina Lungrens Vetenskapsfond, 2002.
- First Degree Diploma at the XXXVII International Scientific Conference “Student and Scientific-Technical Progress”, Novosibirsk, April 1999

- B.Sc. in Mathematics with A Diploma, June 1996.
- First Degree Diploma at the XXXIV International Scientific Conference “Student and Scientific-Technical Progress”, Novosibirsk, April 1996.
- First Degree Diploma at the XXX International Scientific Conference “Student and Scientific-Technical Progress”, Novosibirsk, April 1992.
- Winner of a number of mathematical school Olympiads at different levels.
- Winner of a number of tournaments in judo and sambo (among others: champion of the cities of Siberia (1989); two times champion of Novosibirsk State University).

## Teaching experience

### Reykjavík University, Iceland

Graph Theory (Spring 2011), Probability Theory (Spring 2011), Combinatorics on Words (Spring 2010), Differential Equations (Spring 2010), Discrete Mathematics (Spring 2010), Analysis II (Fall 2009), Probability Theory (Fall 2009), Calculus (Fall 2008), Discrete Mathematics (Fall 2008), Linear Algebra (Fall 2008), Combinatorics (Spring 2008), Discrete Mathematics (Spring 2008), Linear Algebra (Fall 2007), Graph Theory (Spring 2007), Discrete Mathematics (Spring 2007), Linear Algebra (Fall 2006), Topics in Combinatorics (Fall 2006), Discrete Mathematics (Spring 2006), Graph Theory (Fall 2005), Introduction to Mathematics (Fall 2005)

### University of California, San Diego, USA

Calculus 10C (Winter 2009), Calculus 10C (Spring 2005), Calculus 10B (Spring 2005)

### University of Kentucky, USA

Calculus III (MA213, Fall 2004), Calculus MA123 (Fall 2004), Operations Research MA416 (Spring 2004), Calculus MA123 (Spring 2004), Combinatorics and Graph Theory MA415G (Fall 2003), Calculus MA123 (Fall 2003)

### Göteborg University/Chalmers University of Technology, Sweden

Geometry MAN001 (Spring 2003), Discrete Mathematics LMA100 (Spring 2003), Discrete Mathematics LMA100 (Fall 2002), Linear Algebra MIN600 (Fall 2002), Discrete Mathematics MAN240 (Spring 2002), Mathematical Analysis TMA552 (Spring 2002), Linear Algebra MIN600 (Fall 2001), Matematik IT TMA245 (Fall 2001), Mathematical Analysis in several variables TMA082B (Spring 2001), Mathematical Analysis (one variable) MA1200 (Spring 2001), Linear Algebra MAN040 (Fall 2000), Discrete Mathematics MAN240 (Spring 2000)

## Publications

### Book

1. S. Kitaev: Patterns in permutations and words, *Monographs in Theoretical Computer Science* (with a foreword by Jeffrey B. Remmel), Springer-Verlag, ISBN 978-3-642-17332-5, to appear in 2011.

### Journal publications and chapters in books

2. S. Kitaev: Generalized pattern avoidance with additional restrictions, *Séminaire Lotharingien de Combinatoire* **B48e** (2003), 19 pp.

3. S. Kitaev: Multi-avoidance of generalised patterns, *Discrete Mathematics* **260** (2003), 89–100.
4. S. Kitaev: There are no iterated morphisms that define the Arshon sequence and the sigma-sequence, *Journal of Automata, Languages and Combinatorics* **8** (2003) 1, 43–50.
5. S. Kitaev, T. Mansour: Partially ordered generalized patterns and  $k$ -ary words, *Annals of Combinatorics* **7** (2003), 191–200.
6. S. Kitaev: The sigma-sequence and counting occurrences of some patterns, subsequences and subwords, *The Australasian Journal of Combinatorics* **29** (2004), 187–200.
7. A. Evdokimov, S. Kitaev: Crucial words and the complexity of some extremal problems for sets of prohibited words, *Journal of Combinatorial Theory – Series A* **105/2** (2004), 273–289.
8. S. Kitaev, T. Mansour: The problem of the pawns, *Annals of Combinatorics* **8** (2004), 81–91.
9. S. Kitaev: On multi-avoidance of right angled numbered polyomino patterns, *Integers: Electronic Journal of Combinatorial Number Theory* **4** (2004), A21, 20pp.
10. S. Kitaev, T. Mansour, P. Séébold: The Peano curve and counting occurrences of some patterns, *Journal of Automata, Languages and Combinatorics* **9** (2004) 4, 439–455.
11. S. Kitaev, T. Mansour, A. Vella: Pattern avoidance in matrices, *Journal of Integer Sequences* **8**, no. 2 (2005), Article 05.2.2, 16pp.
12. S. Kitaev: Partially ordered generalized patterns, *Discrete Mathematics* **298** (2005), 212–229.
13. S. Kitaev, T. Mansour: Simultaneous avoidance of generalized patterns, *Ars Combinatoria* **75** (2005), 267–288.
14. S. Kitaev, T. Mansour: On multi-avoidance of generalized patterns, *Ars Combinatoria* **76** (2005), 321–350.
15. S. Kitaev, T. Mansour: Linear sequences and Chebyshev polynomials, *The Fibonacci Quarterly* **43.3** (2005), 256–261.
16. A. Burstein, S. Kitaev: On unavoidable sets of word patterns, *SIAM Journal on Discrete Mathematics* **19** (2005) 2, 371–381.
17. S. Kitaev: Segmented partially ordered generalized patterns, *Theoretical Computer Science* **349** (2005) 3, 420–428.
18. S. Kitaev: Counting independent sets on path-schemes, *Journal of Integer Sequences* **9**, no. 2 (2006), Article 06.2.2, 8pp.
19. S. Kitaev, J. Remmel: Classifying descents according to equivalence mod  $k$ , *Electronic Journal of Combinatorics* **13(1)** (2006), #R64.
20. S. Kitaev, T. McAllister, K. Petersen: Enumerating segmented patterns in compositions and encoding with restricted permutations, *Integers: Electronic Journal of Combinatorial Number Theory* **6** (2006), A34, 16pp.
21. S. Kitaev: Introduction to partially ordered patterns, *Discrete Applied Mathematics* **155** (2007), 929–944.
22. S. Kitaev, J. Remmel: Classifying descents according to parity, *Annals of Combinatorics* **11** (2007), 173–193.

23. S. Heubach, S. Kitaev, T. Mansour: Partially ordered patterns and compositions, *Pure Mathematics and Applications (P.U.M.A.)* **17** (2007), No. 1–2, pp. 1–12.
24. S. Kitaev, J. Robbins: On multi-dimensional patterns, *Pure Mathematics and Applications (P.U.M.A.)* **18** (2007), No. 3–4, pp. 1–9.
25. S. Kitaev, T. Mansour, P. Séébold: Counting ordered patterns in words generated by morphisms, *Integers: Electronic Journal of Combinatorial Number Theory* **8** (2008), A03, 28pp.
26. S. Avgustinovich, S. Kitaev: On uniquely  $k$ -determined permutations, *Discrete Mathematics* **308** (2008), 1500–1507.
27. S. Kitaev, A. Pyatkin: On representable graphs, *Journal of Automata, Languages and Combinatorics* **13** (2008) 1, 45–54.
28. S. Kitaev, T. Mansour, J. Remmel: Counting descents, rises, and levels, with prescribed first element, in words, *Discrete Mathematics & Theoretical Computer Science* **10:3** (2008), 1–22.
29. S. Kitaev, S. Seif: Word problem of the Perkins semigroup via directed acyclic graphs, *Order* **25** (2008) 3, 177–194.
30. A. Claesson, S. Kitaev: Classification of bijections between 321- and 132-avoiding permutations, *Séminaire Lotharingien de Combinatoire* **B60d** (2008), 30 pp.
31. A. Burstein, S. Kitaev, T. Mansour: Counting independent sets in certain classes of (almost) regular graphs, *Pure Mathematics and Applications (P.U.M.A.)* **19** (2008), no. 2–3, 17–26.
32. A. Burstein, S. Kitaev: Partially ordered patterns and their combinatorial interpretations, *Pure Mathematics and Applications (P.U.M.A.)* **19** (2008), no. 2–3, 27–38.
33. S. Kitaev, T. Mansour, P. Séébold: Counting ordered patterns in words generated by morphisms, *Lecture Notes in Computer Science* **5196** (2008) 287–298.
34. A. Claesson, S. Kitaev, E. Steingrímsson: Decompositions and statistics for beta(1,0)-trees and nonseparable permutations, *Advances in Applied Mathematics* **42** (2009) 313–328.
35. E. Deutsch, S. Kitaev, J. Remmel: Equidistribution of descents, adjacent pairs, and place-value pairs on permutations, *Journal of Integer Sequences* **12** (2009), Article 09.5.1, 19pp.
36. S. Kitaev, J. Liese, J. Remmel, B. Sagan: Rationality, irrationality, and Wilf equivalence in generalized factor order, *Electronic Journal of Combinatorics* **16(2)** (2009), #R22. Special volume in honor of Anders Björner on the occasion of his 60th birthday.
37. S. Kitaev: A survey on partially ordered patterns, In *Permutation Patterns* (2010), S. Linton, N. Ruškuc, and V. Vatter, Eds., vol. 376 of London Mathematical Society Lecture Note Series, Cambridge University Press, pp. 115–135.
38. S. Avgustinovich, A. Glen, B. V. Halldórsson, S. Kitaev: On shortest crucial words avoiding abelian powers, *Discrete Applied Mathematics* **158** (2010) 605–607. doi:10.1016/j.dam.2009.11.010

39. S. Kitaev, J. Remmel: Place-difference-value patterns: A generalization of generalized permutation and word patterns, *Integers: Electronic Journal of Combinatorial Number Theory* **10** (2010), A11, pp. 129–154.
40. S. Kitaev, A. Pyatkin: On avoidance of V- and  $\Lambda$ -patterns in permutations, *Ars Combinatoria* **97** (2010) 203–215.
41. M. Bousquet-Mélou, A. Claesson, M. Dukes, S. Kitaev: Unlabeled  $(2+2)$ -free posets, ascent sequences and pattern avoiding permutations, *Journal of Combinatorial Theory – Series A* **117** (2010) 7, 884–909.
42. A. Claesson, S. Kitaev, K. Ragnarsson, B. E. Tenner: Boolean complexes for Ferrers graphs, *Australasian Journal of Combinatorics* **48** (2010) 159–173.
43. A. Glen, B. V. Halldórsson, S. Kitaev: Crucial abelian  $k$ -power-free words, *Discrete Mathematics and Theoretical Computer Science* **12** (2010) 5, 83–96.
44. S. Heubach, S. Kitaev: Avoiding substrings in compositions, *Congressus Numerantium* **202** (2010) 87–95.
45. A. Claesson, M. Dukes, S. Kitaev: A direct encoding of Stoimenow’s matchings as ascent sequences, *Australasian Journal of Combinatorics* **49** (2011) 47–59.
46. A. Claesson, V. Jelinek, E. Jelinkova, S. Kitaev: Pattern avoidance in partial permutations, *Electronic Journal of Combinatorics* **18** (2011), #R25.
47. M. Dukes, S. Kitaev, J. Remmel, E. Steingrímsson: Enumerating  $(2+2)$ -free posets by indistinguishable elements, *Journal of Combinatorics*, to appear.
48. S. Avgustinovich, S. Kitaev, A. Pyatkin, A. Valyuzhenich: On square-free permutations, *Journal of Automata, Languages and Combinatorics*, to appear.

### Preprints

49. S. Kitaev, A. Niedermaier, J. Remmel, M. Riehl: New pattern matching conditions for wreath products of the cyclic groups with symmetric groups, submitted.
50. S. Kitaev, J. Remmel, M. Riehl: On a pattern avoidance condition for the wreath product of cyclic groups with symmetric groups, submitted.
51. S. Kitaev, J. Remmel: Enumerating  $(2+2)$ -free posets by the number of minimal elements and other statistics, submitted.
52. R. Ehrenborg, S. Kitaev, P. Perry: A spectral approach to consecutive pattern-avoiding permutations, submitted.
53. S. Kitaev, P. Salimov, C. Severs, H. Úlfarsson: Word-representability and line graphs, submitted.

### Conference proceedings

54. S. Kitaev: Crucial words for the sets of non-repetitive words, Proceedings of the XXXIV International Scientific Conference “Student and Scientific-Technical Progress”, Novosibirsk, Russia (1996), 35–36.
55. S. Kitaev: On crucial words for some sets of prohibitions, Proceedings of the IX International School-Seminar “Synthesis and Complexity of Management Systems”, Nignii Novgorod, Russia (1998).

56. S. Kitaev: On a property of the Arshon sequence, Problems of Theoretical Cybernetics, Thesis of the Talks on the XII International Conference held in Nignii Novgorod, Russia (1999).
57. S. Kitaev: On non-existence of morphisms defining symbolic sequences, Proceedings of the XXXVII International Scientific Conference “Student and Scientific-Technical Progress”, Novosibirsk, Russia (1999), p. 64.
58. S. Kitaev: On pattern avoidance, the Fifth Youth Scientific School in Discrete Mathematics and its Applications, Moscow St. University, Moscow (2001).
59. S. Kitaev: Partially ordered generalized patterns, Proceedings of the 14th International Conference on Formal Power Series & Algebraic Combinatorics, the University of Melbourne, Melbourne, Australia (2002).
60. S. Kitaev: Independent sets on path-schemes, Proceedings of Conference on Discrete Analysis and Operations Research (DAOR’2004), Sobolev Institute of Mathematics, Novosibirsk State University, Novosibirsk, Russia (2004), p. 88.
61. A. Burstein, S. Kitaev: Partially ordered generalized patterns and their combinatorial interpretation, *The Third International Conference on Permutation Patterns*, the University of Florida, Gainesville, Florida, March 7–11, (2005).
62. S. Kitaev: Introduction to the POPs, *Workshop on Permutation Patterns*, the University of Haifa, Israel, May 29–June 3 (2005).
63. S. Kitaev, J. Remmel: Classifying descents according to equivalence mod  $k$ , *Permutation Patterns Conference 2006*, Reykjavík University, Reykjavík, Iceland, June 12–16 (2006).
64. R. Ehrenborg, S. Kitaev, P. Perry: A spectral approach to pattern-avoiding permutations, Proceedings of the *18th International Conference on Formal Power Series & Algebraic Combinatorics*, the University of California, San Diego, USA, June 19–23 (2006).
65. S. Avgustinovich, S. Kitaev: On uniquely  $k$ -determined permutations, Proceedings of the *19th International Conference on Formal Power Series & Algebraic Combinatorics*, Nankai University, Tianjin, China, July 2–6 (2007).
66. S. Kitaev, T. Mansour, P. Séébold: Counting ordered patterns in words generated by morphisms, Pre-proceedings of the *2nd International Conference on Language and Automata Theory and Applications (LATA)*, Taragona, Spain, March 13–19 (2008), 301–312.
67. A. Claesson, S. Kitaev: Classification of bijections between 321- and 132-avoiding permutations. Proceedings of the *20th International Conference on Formal Power Series & Algebraic Combinatorics*, Valparaiso, Chile, June 23–27 (2008).
68. M. Bousquet-Mélou, A. Claesson, M. Dukes, S. Kitaev: Unlabeled  $(2+2)$ -free posets, ascent sequences and pattern avoiding permutations, *Discrete Math. Theor. Comput. Sci. Proc. AK* (2009) 216–228. Proceedings of the *21st International Conference on Formal Power Series & Algebraic Combinatorics*, Hagenberg, Austria, July 20–24 (2009).
69. S. Kitaev, J. Liese, J. Remmel, B. Sagan: Rationality, irrationality, and Wilf equivalence in generalized factor order, *Discrete Math. Theor. Comput. Sci. Proc. AK* (2009) 515–526. Proceedings of the *21st International Conference on Formal Power Series & Algebraic Combinatorics*, Hagenberg, Austria, July 20–24 (2009).

70. A. Glen, B. V. Halldórsson, S. Kitaev: Crucial words for abelian powers, V. Diekert, D. Nowotka (Eds.): *Lecture Notes in Computer Science* **5583** (2009) 264–275. Proceedings of the *13th Conference on Developments in Language Theory, DLT 2009*, Stuttgart, Germany, June 30 – July 3, 2009.
71. S. Kitaev, J. Remmel: Enumerating  $(2+2)$ -free posets by the number of minimal elements and other statistics. *Discrete Math. Theor. Comput. Sci. Proc. AK* (2010) 689–700. Proceedings of the *22nd International Conference on Formal Power Series & Algebraic Combinatorics*, San Francisco State University, San Francisco, USA, August 2–6 (2010).
72. A. Claesson, V. Jelinek, E. Jelinkova, S. Kitaev: Pattern avoidance in partial permutations. *Discrete Math. Theor. Comput. Sci. Proc. AK* (2010) 493–504. Proceedings of the *22nd International Conference on Formal Power Series & Algebraic Combinatorics*, San Francisco State University, San Francisco, USA, August 2–6 (2010).
73. M. Halldórsson, S. Kitaev, A. Pyatkin: Graphs capturing alternations in words, Y. Gao, H. Lu, S. Seki, S. Yu (Eds.): *Lecture Notes in Computer Science* **6224** (2010) 436–437. Proceedings of the *14th Conference on Developments in Language Theory, DLT 2010*, London, Ontario, Canada, August 17–20, 2010.
74. S. Kitaev, P. Salimov, C. Severs, H. Úlfarsson: On the representability of line graphs, *Lecture Notes in Computer Science*, to appear. Proceedings of the *15th Conference on Developments in Language Theory, DLT 2011*, University of Milano-Bicocca, Milan, Italy, July 19–22, 2011.
75. M. Halldórsson, S. Kitaev, A. Pyatkin: Alternation graphs, *Lecture Notes in Computer Science*, to appear. Proceedings of the *37th International Workshop on Graph-Theoretic Concepts in Computer Science, WG 2011*, Teplá Monastery, Czech Republic, June 21–24, 2011.

### Miscellaneous

76. S. Kitaev: Review of “Enumerative Combinatorics” by Charalambos A. Charalambides published by *Chapman & Hall/CRC*, ISBN L-58488-290-5, Hard Cover, 609 pages, *The Book Review Column* edited by William Gasarch, Vol 39, No 4 (2008).
77. S. Kitaev: Generalized Patterns in Words and Permutations, Ph.D. thesis (2003).
78. S. Kitaev: Symbolic Sequences, Crucial Words and Iterations of a Morphism, thesis for the Degree of Licentiate of Philosophy (2000).
79. S. Kitaev: Crucial words for some sets of prohibitions, M.Sc. thesis (1998).

### Unpublished

80. S. Kitaev, T. Mansour: A survey of certain pattern problems, preprint (2003).

### Presentations held

1. On  $(2+2)$ -free posets and equinumerous objects, DIMAP Workshop on Combinatorics and Graph Theory, *University of Warwick*, UK, April 4, 2011
2. Graphs representable by words, Colloquium talk, Department of Mathematics, *California Polytechnic State University*, San Luis Obispo, February 18, 2011
3. Planar maps and description trees, Combinatorics Seminar, *University of California*, San Diego, February 16, 2011

4. On graphs representable by words, Combinatorics, Graph Theory and Applications Seminar, *Universitat Politecnica de Catalunya*, Barcelona, Spain, November 25, 2010
5. Interval orders and equinumerous objects, Combinatorics, Graph Theory and Applications Seminar, *Universitat Politecnica de Catalunya*, Barcelona, Spain, October 7, 2010
6. On representable graphs, *University of Strathclyde*, Glasgow, Scotland, September 9, 2010
7. On  $(2+2)$ -free posets, Factorial Languages Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, July 13, 2010
8. Counting  $(2+2)$ -free posets by indistinguishable elements and a conjecture of Jovovic, ICE-TCS Theory Day 2010, *Reykjavik University*, Reykjavik, April 30, 2010
9. Snake-in-the-box problem, Graph and Algorithms Seminar, *Reykjavik University*, Reykjavik, March 25, 2010
10. Finally, we can count  $2+2!$ , Reykjavik University Lecture Marathon 2010, *Reykjavik University*, Reykjavik, March 19, 2010
11. Binary uniform distributions on graphs, Graph and Algorithms Seminar, *Reykjavik University*, Reykjavik, February 25, 2010
12. On  $(2+2)$ -free posets, *Jagiellonian University in Krakow*, Krakow, Poland, February 5, 2010
13. Combinatorial methods, *Nowy Sacz School of Business*, Teaching Staff Mobility Programme, Nowy Sacz, Poland, February 3, 2010
14. Enumerating  $(2+2)$ -free posets by the number of minimal elements and other statistics, *Nowy Sacz School of Business*, Nowy Sacz, Poland, February 3, 2010
15. Pattern avoidance in permutations and  $\beta(1,0)$ -trees, Mathematics Department Colloquium, *California State University*, Los Angeles, January 20, 2010
16. Pattern avoidance on partial permutations, Combinatorics Seminar, *University of California*, San Diego, January 19, 2010
17. Enumerating  $(2+2)$ -free posets by the number of minimal elements and other statistics, Invited talk at the AMS Special Session on Enumerative Combinatorics at San Francisco AMS-MAA Joint Meetings, San Francisco, January 15, 2010
18. Decompositions and statistics for beta(1,0)-trees and nonseparable permutations, Colloquium talk, Department of Mathematics, *California Polytechnic State University*, San Luis Obispo, January 12, 2010
19. Enumeration of  $(2+2)$ -free posets by the number of minimal elements and other statistics, ICE-TCS Lectures Series, *Reykjavik University*, Reykjavik, October 16, 2009
20. From squares in words to squares in permutations, Conference "Mathematics in Iceland 2009," Leirubakki, Iceland, September 19, 2009
21. Crucial words for abelian powers, 13th International Conference on Developments in Language Theory (DLT 09), *Universität Stuttgart*, Germany, July 2, 2009
22. A lower bound for the shortest length of a crucial word avoiding abelian powers, Factorial Languages Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, May 11, 2009
23.  $(2+2)$ -free posets and equinumerous objects, Factorial Languages Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, April 27, 2009
24. Crucial words for abelian  $k$ -th powers, Factorial Languages Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, April 20, 2009
25.  $(2+2)$ -free posets and related objects, Combinatorics and Sequences Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, April 15, 2009
26.  $(2+2)$ -free posets, ascent sequences, regular linearized chord diagrams, and pattern avoiding permutations, Special Discrete Mathematics Seminar, *University of California*, Berkeley, March 18, 2009

27. Graphs represented by words, Combinatorics Seminar, *University of California*, San Diego, March 17, 2009
28. Crucial words for abelian powers, Combinatorics Seminar, *University of California*, San Diego, March 3, 2009
29. Interval orders, pattern avoiding permutations, and involutions with no neighbor nesting, Discrete Math Seminar, *Arizona State University*, Tempe, March 2, 2009
30. Unlabeled  $(2+2)$ -free posets, ascent sequences, regular linearized chord diagrams, and pattern avoiding permutations, Mathematics Department Colloquium, *California State University*, Los Angeles, February 25, 2009
31. Permutations, sequences, and partially ordered sets, Combinatorics Seminar, *University of California*, San Diego, February 10, 2009
32. Restricted permutations and  $\beta(1,0)$ -trees, Combinatorics Seminar, *California Institute of Technology*, Pasadena, February 5, 2009
33. Generalized pattern avoidance,  $\beta(1,0)$ -trees, and 2-stack sortable permutations, Combinatorics Seminar, *University of California*, San Diego, January 27, 2009
34. On uniquely  $k$ -determined permutations, Combinatorics Seminar, *Reykjavik University*, Reykjavik, October 17, 2008
35. On Generalized Factor Order on Words, ICE-TCS Theory Day, *Reykjavik University*, Reykjavik, May 30, 2008
36. Enumerating independent sets in path-schemes and grid graphs, Graph and Algorithms Seminar, *Reykjavik University*, Reykjavik, May 21, 2008
37. Cutting cycles in de Bruijn graphs, Graph and Algorithms Seminar, *Reykjavik University*, Reykjavik, April 9, 2008
38. Counting ordered patterns in words generated by morphisms, 2nd International Conference on Language and Automata Theory and Applications (LATA 2008), Tarragona, Spain, March 18, 2008
39. Ordered patterns in words generated by morphisms, ICE-TCS seminar, *Reykjavik University*, Reykjavik, February 15, 2008
40. Bijections between 321- and 132-avoiding permutations, ICE-TCS seminar, *Reykjavik University*, Reykjavik, December 19, 2007
41. Sequences and morphisms, Pure Mathematics Colloquium, *University of St Andrews*, St Andrews, Scotland, October 25, 2007
42. Generalized pattern avoidance and two-stack sortable permutations, Discrete Analysis Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, July 12, 2007
43. Generalized pattern avoidance,  $\beta(1,0)$ -trees, and two-stack sortable permutations, Permutation Patterns Conference 2007, *University of St Andrews*, St Andrews, Scotland, UK, June 12, 2007
44. Non-attacking placements on chessboards, *University of Iceland*, Reykjavik, February 22, 2007
45. On universal cycles and combinatorial objects, ICE-TCS colloquium talk, *Reykjavik University*, Reykjavik, February 2, 2007
46. On representable graphs, ICE-TCS seminar, *Reykjavik University*, Reykjavik, January 12, 2007
47. Representable graphs, Combinatorics Seminar, *University of California*, San Diego, November 14, 2006
48. Differential equations and permutation patterns, Special PDE and Combinatorics Seminar, *University of Kentucky*, Lexington, November 10, 2006
49. Universal cycles and combinatorial objects, Colloquium Lecture, *University of Kentucky*, Lexington, November 9, 2006
50. Uniquely  $k$ -determined permutations, the ICE-TCS seminar, *Reykjavik University*, Reykjavik, Iceland, September 20, 2006
51. Combinatorial patterns, Factorial Languages Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, August 7, 2006

52. Classifying descents according to equivalence mod  $k$ , Permutation Patterns Conference 2006, *Reykjavík University*, Reykjavík, Iceland, June 12, 2006
53. An introduction to permutation patterns, The second ICE-TCS Symposium, *University of Iceland*, Reykjavík, Iceland, May 31, 2006
54. Patterns and their generalizations, the Department of Informatics Seminar, the *University of Bergen*, Bergen, Norway, March 2, 2006
55. Enumerating patterns in compositions, the ICE-TCS seminar, *Reykjavík University*, Reykjavík, February 10, 2006
56. Introduction to partially ordered patterns, the *University of Iceland*, Reykjavík, October 20, 2005
57. Patterns and their generalizations, the *University of Iceland*, Reykjavík, October 13, 2005
58. Sets of prohibitions and some problems related to them, the ICE-TCS seminar, *Reykjavík University*, Reykjavík, October 7, 2005
59. On a common feature in three famous sequences, ICE-TCS seminar, *Reykjavík University*, Reykjavík, September 1, 2005
60. Introduction to partially ordered patterns, Combinatorics Seminar, *University of California, San Diego*, April 26, 2005
61. Independent sets in graphs: Enumeration and connections to other combinatorics, Combinatorics Seminar, *Chalmers/GU*, Göteborg, Sweden, February 3, 2005
62. Partially ordered patterns, *Institut Mittag-Leffler*, Stockholm, Sweden, February 1, 2005
63. Partially ordered patterns and their relations to other combinatorial objects, Combinatorics Seminar, *University of Louisville*, Louisville, November 23, 2004
64. Walks in the positive quadrant and pattern avoidance in permutations, Combinatorics Seminar, *University of Kentucky*, Lexington, October 18, 2004
65. Independent sets on path-schemes, Conference on Discrete Analysis and Operations Research (DAOR'2004), *Sobolev Institute of Mathematics*, Novosibirsk, Russia, July 1, 2004
66. Combinatorics on words and graphs, Rocky Mountain Algebraic Combinatorics Seminar, *Colorado State University*, Fort Collins, May 7, 2004
67. Sequences and iterations of morphisms, Combinatorics Seminar, *University of Louisville*, Louisville, March 23, 2004
68. Non-overlapping patterns in permutations and words, Combinatorics Seminar, *University of California, San Diego*, March 5, 2004
69. Numerical characteristics of unavoidable sets, Combinatorics Seminar, *California Institute of Technology*, Pasadena, March 4, 2004
70. The Dragon curve, the Peano curve, and combinatorics on words, PIC Special Research Seminar at *University of California, Los Angeles*, March 3, 2004
71. Unavoidable sets and their numerical characteristics, Combinatorics Seminar, *University of Illinois at Chicago*, Chicago, February 25, 2004
72. On a common feature in certain sequences, Combinatorics Seminar, *University of Illinois at Urbana-Champaign*, Urbana, February 24, 2004
73. On some famous sequences, Combinatorics Seminar, *Massachusetts Institute of Technology*, Cambridge, February 20, 2004
74. Non-overlapping patterns in permutations, Combinatorics Seminar, *University of Pennsylvania*, Philadelphia, February 19, 2004
75. Unavoidable sets of word patterns and universal cycles, Discrete Analysis Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, January 8, 2004
76. A survey of certain pattern problems, Discrete Analysis Seminar, *Sobolev Institute of Mathematics*, Novosibirsk, Russia, December 25, 2003
77. On unavoidable sets, universal cycles and word patterns, Combinatorics Seminar, *Chalmers/GU*, Göteborg, Sweden, December 9, 2003

78. On Some of Aspects of Combinatorics on Words, Colloquia Lecture, *Iowa State University*, Ames, October 21, 2003
79. On 2-separated paths in the  $n$ -cube, ISU Combinatorics and Algebra Seminar, *Iowa State University*, Ames, October 20, 2003
80. Symbolic sequences, crucial words and iterations of a morphism, Combinatorics Seminar, *University of Kentucky*, Lexington, September 15, 2003
81. Non-attacking placements on chessboards, Combinatorics Seminar, *Chalmers/GU*, Göteborg, Sweden, May 27, 2003
82. Partially Ordered Generalized Patterns, Poster at the 14th International Conference on Formal Power Series & Algebraic Combinatorics (FPSAC'02), *University of Melbourne*, Melbourne, Australia, July 8–12, 2002
83. Simultaneous Avoidance of Generalized Patterns, Workshop “Algebraic Combinatorics,” *Royal Institute of Technology*, Stockholm, Sweden, May 21–22, 2002
84. Multi-Avoidance of Generalized Patterns, The 48th Seminaire Lotharingien de Combinatoire, Domaine Saint-Jacques, France, 2002
85. Completeness and complexity of some extremal problems for sets of prohibited words, Combinatorics Seminar, *Chalmers/GU*, Göteborg, Sweden, September 26, 2001
86. On non-existence of an iterative morphism which defines an Arshon sequence, Swedish-Russian conference “Combinatorics, Dynamics, Probabilities”, *Royal Institute of Technology*, Stockholm, Sweden, October 3–7, 2000
87. The involution principle and the Rogers-Ramanujan identities, Combinatorics Seminar, *Chalmers*, Göteborg, Sweden, May 8, 2000
88. On Non-Existence of Morphisms that Define the Symbolic Sequences, The XXXVII International Scientific Conference “Student and Scientific-Technical Progress”, *Novosibirsk State University*, Novosibirsk, Russia, 1999 (A Diploma)
89. On a Property of the Arshon Sequence, Problems of Theoretical Cybernetics, The XII International Conference, *Nizhny Novgorod State University*, Nizhny Novgorod, Russia, 1998
90. Crucial Words for the Sets of Words Avoiding Abelian Squares, The First Youth Scientific School in Discrete Mathematics and its Applications, *Moscow State University*, Moscow, Russia, 1997
91. Crucial Words for the Sets of Non-Repetitive Words, The XXXIV International Scientific Conference “Student and Scientific-Technical Progress”, *Novosibirsk State University*, Novosibirsk, Russia, 1996 (A Diploma)
92. Coloring beads, The XXIV Conference of Omsk Scientific-Oriented Student Society “Search” (section of algebra), Omsk, Russia, 1992
93. Arithmetical progressions and colouring beads, The XXX International Scientific Conference “Student and Scientific-Technical Progress”, *Novosibirsk State University*, Novosibirsk, Russia, 1992 (A Diploma)