

Curriculum Vitae

Dmitrii V. PASECHNIK

Address and present positions Senior Research Fellow
Department of Computer Science, University of Oxford
and Stipendiary Lecturer (permanent contract) and Senior Research Fellow
in Pure Mathematics, Pembroke College, University of Oxford

URL: <http://www.cs.ox.ac.uk/people/dmitrii.pasechnik/>
e-mail: dimpase@cs.ox.ac.uk

Home address 22 Hayfield Road, OX2 6TT Oxford, UK

Citizenship: Netherlands

Marital status: married, one child, born 31/08/2012

Degrees: Diploma in computer science
Moscow National University of Science and Technology (MISIS) (1989)

PhD in Mathematics (with Distinction),
the University of Western Australia (1996)

Research interests

Computer Algebra, Scientific Computation, Computational Complexity,
Optimization (nonlinear and linear) and its applications, moment problems,
Algebra, Algebraic Geometry, Combinatorics,
Graph Theory, Group Theory (including computational).

I contribute to the development and maintainance of the computer algebra systems Sage (<http://www.sagemath.org>) and GAP (<http://www.gap-system.org>), and use these systems for research and teaching. I was a Google Summer of Code (GSoC) mentor for Sage Project organization in 2012-2017, and am a mentor and an admin in 2018 (ongoing).

Grants

NTU SPMS Faculty Startup Grant	42,000\$\$	(Apr. 2006-Mar. 2009)
Merlion Grant by the Embassy of France PI on Singaporean side of the project	40,000\$\$	(Aug. 2008-Aug. 2010)
Singapore Ministry of Education Tier 1 Grant,	60,000\$\$	(Apr. 2009-Mar. 2012)
Singapore Ministry of Education Tier 2 Grant,	658,000\$\$	(Nov. 2011-Oct. 2014)
Institute for Mathematical Sciences (IMS), National University of Singapore, thematic 2.5-month program on inverse moment problems	130,000\$\$ co-organiser	(Nov. 2013-Jan. 2014)
NTU Senior Reseach Scientist Grant	400,000\$\$	(Jan. 2013-Jan. 2017)
EPSRC (EP/M022641/1) CCP in Computational Discrete Mathematics	294,007 £ named person	(Mar. 2015-Feb. 2020) travel funding, etc
EU Horizon 2020 Research Infrastructures Grant OpenDreamKit: http://opendreamkit.org	50% salary	(Oct. 2015-Oct. 2019)
Total		(approx. 1.1M€)

Citations

According to Google Scholar, my papers and preprints were cited **1767** times; top two papers (published in 2002 and 2007) received 265 and 116 citations, respectively; current *h*-index is **22**.

According to MathSciNet (AMS), my papers were cited **451** times.

Positions held:

1982-1983	Software Engineer, Computing Center of the Health Ministry of the USSR,
1989-1992	Engineer, Laboratory of Discrete Mathematics Institute for System Studies Academy of Sciences of the USSR.
1992-1994	PhD Research Student and part-time tutor, Department of Mathematics University of Western Australia
1994-1996	Research fellow, Research Institute for Applications of Computer Algebra (RIACA) CWI Amsterdam/TU Eindhoven, The Netherlands
04/1997-03/1999	Postdoc, SSOR, Faculty of Technical Mathematics TU Delft, The Netherlands
04/1999-04/2000	Scientific programmer (ESPRIT EU project GALIA/CGAL), Dept. of Computer Science, Faculty of Mathematics and Informatics Utrecht University, The Netherlands
04/2000-04/2002	Postdoc, SSOR, Dept. of Technical Mathematics and Informatics TU Delft, The Netherlands
05/2002-07/2004	Scientific researcher, Theoretic Informatics Group, FB 20, University Frankfurt/Main, Germany
09/2004-12/2005	Research fellow, Dept. E & OR, FEB Tilburg University, The Netherlands
01/2006-09/2013	Assistant Professor, Division of Mathematical Sciences Nanyang Technological University, Singapore

Undegraduate teaching

At NTU

Calculus IV	(Spring 2006)	class size 10
Real Analysis I	(Autumn 2007)	class size 12
Abstract Algebra I	(Spring 2007-2009)	class sizes 10-20
Real Analysis III	(Autumn 2008)	class size 5
Topology	(Autumn 2007, 2008)	class size 6-8
Graph Theory	(Autumn 2009-2010)	class size 8-10
Deterministic Methods in OR (Optimization II)	(Spring 2010-2012)	class size 5-6
Experimental Mathematics	(Autumn 2011)	class size 120
Tutorials/labs in Linear Algebra and Calculus	(multiple years)	class sizes 20-30

At Pembroke College (Oxford)

Tutorial sessions for groups 2 to 4 students, classes for 8-10 students.

Various 1st-2nd year Maths tutorials (2014-)

At Balliol College (Oxford)

Tutorial sessions for groups 2 to 4 students.

Constructive Maths	(TT 2014)
Continuous Maths	(HT 2015,2016)

At Mathematics Institute (Oxford)

Assessor (designed course materials) for Computational Mathematics 1st year course, 2016-17.

Graduate teaching (at NTU)

Seminar on Computational Commutative Algebra	(Autumn 2007)	class size 10
Algebra I	(Spring 2007)	class size 10
Representation Theory	(Spring 2011)	class size 12
Introduction to Algebraic Geometry	(Fall 2012)	class size 10

(Post)graduate supervision

Postdoctoral:

Romanos Malikiosis (January 2012 - August 2013)
Nikolai (Nick) Gravin (November 2012 - August 2012)
Mehdi Ghasemi (February 2013 - January 2014).

Supervised PhD students:

Svetlana Obraztsova (co-supervised with Edith Elkind; started in August 2008, defended the thesis in October 2012).
Nick Gravin (started in January 2009, defended the thesis in June 2013.)
Gao Mou (started in August 2012, defended the thesis in January 2016).

Supervised MSc students:

Alexey Beshenov, (remotely) at the Russian Academy of Sciences University at St.Petersburg (degree granted in 2012).
Ingólfur Eðvarðsson (MSc in CS, Oxford) (degree granted in 2014).
Dario Asprone (MSc in CS, Oxford) (2018, ongoing).
Kaashif Hymabaccus (Maths and CS, Oxford) (2018-2019, ongoing).

Scholarships and visiting positions

Australian Overseas Postgraduate Research Scholarship	(1992-1994)
University of Western Australia Research Studentship	(1992-1994)
C.N.R. Visiting Professor, Univ. L'Aquila/Univ. Siena, Italy	(March 1996)
Visiting Professor, Ecole Normale Sup., Paris, France	(April-May 2000)
Visiting Professor, IRMAR, Univ. Rennes I, France	(March 2003)
General Member (fully funded), MSRI, Berkeley, USA	(January-April 2004)
Visiting Professor, Math. Dept., Univ. Brest, France	(June 2005)
Visiting Professor, IRMAR, Univ. Rennes I, France	(June-July 2006)
General Member (funded), IMA, Univ. of Minnesota, USA	(May-June 2007)
Visiting Professor, IRMAR, Univ. Rennes I, France	(June 2009)
Visiting Fellow, Isaac Newton Institute, Cambridge, UK	(July/August 2013)
Visiting Fellow, Simons Institute, Berkeley, USA	(August/October 2015)
Visiting Professor, LRI, Univ. Paris Sud, France	(November/December 2017)
Visiting Fellow, ICERM, Brown University, USA	(fall 2018, forthcoming)

Other professional activities

Program Committee memberships. AAMAS 2011, IJCAI 2011.

Organizing Committee memberships. WINE 2011, IMS (Singapore) Thematic program on inverse moment problems, 2012/13, (Co-Chair).

Grant refereeing. MITACS (a Canadian funding agency), AMS/NSA Grant Program in Mathematical Sciences (USA), Portuguese Foundation for Science and Technology (FCT), NWO (Dutch science funding agency), Research Grants Council (RGC, Hong Kong).

PhD theses examiner. University of Rennes I (France), NTU (Singapore), University of Birmingham (UK), University Paris Sud (France).

MSc theses examiner. University of Oxford, Nanyang Technological University.

Journal refereeing. European Journal of Combinatorics, Journal of Algebraic Combinatorics, Journal of Computational and Applied Mathematics, Applicable Algebra in Engineering, Communication and Computing, Combinatorica, Advances in Mathematics, Communications in Algebra, Discrete Mathematics, Discrete Applied Mathematics, Discrete and Computational Geometry, Mathematical Programming, SIAM Journal on Optimization, Theoretical Computer Science, Journal of Global Optimization, Graphs and Combinatorics, Journal of Group Theory, Designs, Codes, and Cryptography.

Membership in professional societies: London Mathematical Society (LMS).

Administrative work (at NTU)

- Member of NTU Senate Sub-Committee on Technology Empowered Learning Infrastructure for Classroom of Tomorrow (2008–2010).
- NTU Division of Mathematical Sciences coordinator for the undergraduate student exchange programs (2007–2012).
- NTU Division of Mathematical Sciences undergraduate classes timetables coordinator (2008).

Computing and IT skills

General-purpose programming languages and tools:

Working knowledge of: Python, C, C++, Fortran

Unix shells and make, autotools (autoconf/automake), Git and Mercurial.

Some experience with: Lisps (Scheme and CL), Haskell, Javascript, Basic, CVS and Subversion, database programming.

Working knowledge of CASs: Sage, GAP, Mathematica, Maple, Matlab, Singular, Maxima, Macaulay2.

Other IT skills: basic knowledge of and experience with Linux system administration, web pages and applications, HTML/CSS, Windows and Cygwin (a Windows POSIX emulator), Apple OSX, HP/UX, Solaris.

Academic referees

Prof. Saugata Basu <sbasu@math.purdue.edu>

Prof. Etienne de Klerk <e.deklerk@uvt.nl>

Prof. Claus Scheiderer <claus.scheiderer@uni-konstanz.de>

Prof. Boris Shapiro <shapiro@math.su.se>

Publications

Journal publications

- [1] N. Gravin, D.V. Pasechnik, B. Shapiro, and M. Shapiro. On moments of a polytope. *Analysis and Mathematical Physics*, tbd, 2018. arXiv.org e-print math 1210.3193. <https://doi.org/10.1007/s13324-018-0226-8>.
- [2] D. V. Pasechnik. Locally toroidal polytopes of rank 6 and sporadic groups. *Advances in Mathematics*, 312:459–472, 2017. <http://doi.org/10.1016/j.aim.2017.03.029>.
- [3] V. L. Ginzburg and D. V. Pasechnik. Random Chain Complexes. *Arnold Mathematical Journal*, 3:197–204, 2017. <http://dx.doi.org/10.1007/s40598-016-0062-6>.
- [4] N. Cohen and D. V. Pasechnik. Implementing Brouwer’s database of strongly regular graphs. *Designs, Codes, and Cryptography*, 84:223–235, 2017. <http://dx.doi.org/10.1007/s10623-016-0264-x>.
- [5] G. Mou and D. Pasechnik. Edge-dominating cycles, k -walks and Hamilton prisms in $2K_2$ -free graphs. *J. Knot Theory and its Ramifications*, 25:1–9, 2016. <http://dx.doi.org/10.1142/S0218216516420116>.
- [6] S. Margulies, S. Onn, and D. V. Pasechnik. On the complexity of Hilbert refutations for partition. *J. Symbolic Comput.*, 66:70–83, 2015.
- [7] Chan Swee Hong, H. Hollmann, and D.V. Pasechnik. Sandpile groups of generalized de Bruijn and Kautz graphs and circulant matrices over finite fields. *Journal of Algebra*, 421:268295, 2015. arXiv.org e-print math 1405.0113.
- [8] D.V. Pasechnik and B. Shapiro. On polygonal measures with vanishing harmonic moments. *Journal d’Analyse Mathématique*, 123(1):281–301, 2014. arXiv.org e-print math 1209.4014.
- [9] D. Bremner, M. Dutour Sikirić, D.V. Pasechnik, T. Rehn, and A. Schürmann. Computing symmetry groups of polyhedra. *LMS Journal of Computation and Mathematics*, 17:565–581, 2014. arXiv.org e-print math 1210.0206.
- [10] S. Duzhin and D.V. Pasechnik. Automorphisms of necklaces and sandpile groups. *Notes of Scientific Seminars of the St.Petersburg Department of the Steklov Mathematical Institute*, 421:81–93, 2014. arXiv.org e-print 1304.2563.
- [11] S.V. Duzhin and D.V. Pasechnik. Groups acting on necklaces and sandpile groups. *Journal of Mathematical Sciences*, 200(6):690–697, 2014. originally published as [10].
- [12] E. de Klerk, D. V. Pasechnik, and G. Salazar. Book drawings of complete bipartite graphs. *Discrete Applied Mathematics*, 167:80–93, 2014. arXiv.org e-print math 1210.2918.
- [13] M.F. Ezerman, Somphong Jitman, San Ling, and D.V. Pasechnik. CSS-like constructions of asymmetric quantum codes. *IEEE Transactions on Information Theory*, 59(10):6732–6754, 2013. arXiv.org e-print cs 1207.6512.
- [14] E. de Klerk, D. V. Pasechnik, and G. Salazar. Improved lower bounds for book crossing numbers of complete graphs. *SIAM Journal on Discrete Mathematics*, 27:619–633, 2013. arXiv.org e-print math 1207.5701.

- [15] Andries E. Brouwer and Dmitrii V. Pasechnik. Two distance-regular graphs. *Journal of Algebraic Combinatorics*, 36(3):403–407, 2012. <http://arxiv.org/abs/1107.0475>.
- [16] E. de Klerk and D.V. Pasechnik. Improved lower bounds for the 2-page crossing numbers of $K_{m,n}$ and K_n via semidefinite programming. *SIAM Journal on Optimization*, 22:581–595, 2012. <http://arxiv.org/abs/1110.4824>.
- [17] N. Gravin, J.B. Lasserre, D.V. Pasechnik, and S. Robins. The inverse moment problem for convex polytopes. *Discrete and Computational Geometry*, 48(3):596–621, 2011. <http://arxiv.org/abs/1106.5723>.
- [18] E. de Klerk, C. Dobre, D.V. Pasechnik, and R. Sotirov. On semidefinite programming relaxations of maximum k -section. *Mathematical Programming B*, 136(2):253–278, 2012. e-print nr. 2010-07-2689 at Optimization online.
- [19] E. de Klerk, C. Dobre, and D. V. Pasechnik. Numerical block diagonalization of matrix *-algebras with application to semidefinite programming. *Mathematical Programming B*, 129(1):91–111, 2011. e-print 2009-02-2244 at Optimization online.
- [20] Alexander A. Ivanov, Dmitrii V. Pasechnik, Akos Seress, and Sergey Shpectorov. Majorana representations of the symmetric group of degree 4. *Journal of Algebra*, 324:2432–2463, 2010.
- [21] S. Basu, D.V. Pasechnik, and M.-F. Roy. Computing the Betti numbers of semi-algebraic sets defined by partly quadratic systems of polynomials. *Journal of Algebra*, 321:2206–2229, 2009. arXiv.org preprint math.GT/0806.3911.
- [22] S. Basu, D.V. Pasechnik, and M.-F. Roy. Bounding the Betti numbers and computing the Euler-Poincare characteristic of semi-algebraic sets defined by partly quadratic systems of polynomials. *Journal of European Mathematical Society*, 12:529–553, 2010. arXiv.org preprint math.AG/0708.3522.
- [23] E. De Klerk, D.V. Pasechnik, and R. Sotirov. On semidefinite programming relaxations of the traveling salesman problem. *SIAM Journal on Optimization*, 19:1559–1573, 2008. Preprint 2007-12-1858 at Optimization online.
- [24] E. De Klerk, M.W. Newman, D.V. Pasechnik, and R. Sotirov. On the Lovász theta-number of almost regular graphs with application to Erdős-Rényi graphs. *European Journal of Combinatorics*, 30:879–888, 2009. Preprint 2006-09-1476 at Optimization Online.
- [25] Y.-Q. Bai, E. De Klerk, D.V. Pasechnik, and R. Sotirov. Exploiting group symmetry in truss topology optimization. *Optimization and Engineering*, 10:331–349, 2009. Preprint 2007-04-1639 at Optimization online.
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- [27] E. de Klerk and D. V. Pasechnik. A linear programming reformulation of the standard quadratic optimization problem. *Journal of Global Optimization*, 37:75–84, 2007. <http://dx.doi.org/10.1007/s10898-006-9037-9>.
- [28] E. de Klerk, D. V. Pasechnik, J. Maharry, B. Richter, and G. Salazar. Improved bounds for the crossing numbers of $K_{m,n}$ and K_n . *SIAM Journal on Discrete Mathematics*, 20:189–202, 2006.

- [29] Etienne de Klerk, Dmitrii V. Pasechnik, and Alexander Schrijver. Reduction of symmetric semidefinite programs using the regular $*$ -representation. *Mathematical Programming B*, 109:613–624, 2007. e-print 2005-03-1083, Optimization Online.
- [30] M. Filaseta, A. Kumchev, and D. V. Pasechnik. On the irreducibility of a truncated binomial expansion. *Rocky Mountains J. Math.*, 37:455–464, 2007. e-print math.NT/0409523 at arXiv.org.
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- [32] D. Grigoriev and D. V. Pasechnik. Polynomial-time computing over quadratic maps I. sampling in real algebraic sets. *Computational Complexity*, 14:20–52, 2005. e-print cs.SC/0403008 at arXiv.org.
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- [35] Etienne de Klerk and Dmitrii V. Pasechnik. Products of positive forms, linear matrix inequalities, and Hilbert 17th problem for ternary forms. *European J. Oper. Res.*, 157(1):39–45, 2004.
- [36] A. A. Ivanov and D. V. Pasechnik. Minimal representations of locally projective amalgams. *J. London Math. Soc. (2)*, 70(1):142–164, 2004.
- [37] A. A. Ivanov and D. V. Pasechnik. c -extensions of the $F_4(2)$ -building. *Discrete Math.*, 264(1-3):91–110, 2003. The 2000 Com²MaC Conference on Association Schemes, Codes and Designs (Pohang).
- [38] Dima Grigoriev, Edward A. Hirsch, and Dmitrii V. Pasechnik. Complexity of semialgebraic proofs. *Mosc. Math. J.*, 2(4):647–679, 805, 2002. Dedicated to Yuri I. Manin on the occasion of his 65th birthday.
- [39] E. de Klerk and D. V. Pasechnik. Approximation of the stability number of a graph via copositive programming. *SIAM J. Optim.*, 12(4):875–892 (electronic), 2002.
- [40] Michel Deza and Dmitrii V. Pasechnik. On equicut graphs. *Mult.-Valued Log.*, 7(5-6):363–377, 2001. Ivo G. Rosenberg’s 65th birthday, Part 2.
- [41] Dmitrii V. Pasechnik. On computing Hilbert bases via the Elliot-MacMahon algorithm. *Theoret. Comput. Sci.*, 263(1-2):37–46, 2001. Combinatorics and computer science (Palaiseau, 1997).
- [42] Philippe Cara, Serge Lehman, and Dimitrii V. Pasechnik. On the number of inductively minimal geometries. *Theoret. Comput. Sci.*, 263(1-2):31–35, 2001. Combinatorics and computer science (Palaiseau, 1997).
- [43] A. A. Ivanov, D. V. Pasechnik, and S. V. Shpectorov. Extended F_4 -buildings and the Baby Monster. *Invent. Math.*, 144(2):399–433, 2001.

- [44] B. Baumeister, A. A. Ivanov, and D. V. Pasechnik. A characterization of the Petersen-type geometry of the McLaughlin group. *Math. Proc. Cambridge Philos. Soc.*, 128(1):21–44, 2000.
- [45] Dmitrii V. Pasechnik and Cheryl E. Praeger. On transitive permutation groups with primitive subconstituents. *Bull. London Math. Soc.*, 31(3):257–268, 1999.
- [46] Barbara Baumeister and Dmitrii V. Pasechnik. The universal covers of certain semiplanes. *European J. Combin.*, 18(5):491–496, 1997.
- [47] Alberto Del Fra, Dmitrii V. Pasechnik, and Antonio Pasini. A new family of extended generalized quadrangles. *European J. Combin.*, 18(2):155–169, 1997.
- [48] Dmitrii V. Pasechnik. The extensions of the generalized quadrangle of order $(3, 9)$. *European J. Combin.*, 17(8):751–755, 1996.
- [49] Barbara Baumeister and Dmitrii V. Pasechnik. The universal covers of the sporadic semiplanes. *European J. Combin.*, 17(7):595–604, 1996.
- [50] Hans Cuyppers, Anna Kasikova, and Dmitrii V. Pasechnik. Multiple extensions of generalized hexagons related to the simple groups McL and Co_3 . *J. London Math. Soc. (2)*, 54(1):16–24, 1996.
- [51] Leonid Brailovsky, Dmitrii V. Pasechnik, and Cheryl E. Praeger. Classification of 2-quasi-invariant subsets. *Ars Combin.*, 42:65–76, 1996.
- [52] Alexander A. Ivanov, Dmitrii V. Pasechnik, and Sergey V. Shpectorov. Non-abelian representations of some sporadic geometries. *J. Algebra*, 181(2):523–557, 1996.
- [53] Dmitrii V. Pasechnik. The triangular extensions of a generalized quadrangle of order $(3, 3)$. *Bull. Belg. Math. Soc. Simon Stevin*, 2(5):509–518, 1995.
- [54] Dmitrii V. Pasechnik. Extending polar spaces of rank at least 3. *J. Combin. Theory Ser. A*, 72(2):232–242, 1995.
- [55] Dmitrii V. Pasechnik. Extended generalized octagons and the group He. *Geom. Dedicata*, 56(1):85–101, 1995.
- [56] Leonid Brailovsky, Dmitrii V. Pasechnik, and Cheryl E. Praeger. Subsets close to invariant subsets for group actions. *Proc. Amer. Math. Soc.*, 123(8):2283–2295, 1995.
- [57] Dmitrii V. Pasechnik. Geometric characterization of the sporadic groups Fi_{22} , Fi_{23} , and Fi_{24} . *J. Combin. Theory Ser. A*, 68(1):100–114, 1994.
- [58] Dmitrii V. Pasechnik. Geometric characterization of graphs from the Suzuki chain. *European J. Combin.*, 14(5):491–499, 1993. Algebraic combinatorics (Vladimir, 1991).
- [59] A. Munemasa, D. V. Pasechnik, and S. V. Shpectorov. The automorphism group and the convex subgraphs of the quadratic forms graph in characteristic 2. *Journal of Algebraic Combinatorics*, 2(4):411–419, 1993.
- [60] Dmitrii V. Pasechnik. New examples of finite \tilde{C}_2 -geometries. *Geom. Dedicata*, 46(2):161–164, 1993.
- [61] Dmitrii V. Pasechnik. Skew-symmetric association schemes with two classes and strongly regular graphs of type $L_{2n-1}(4n-1)$. *Acta Appl. Math.*, 29(1-2):129–138, 1992. Interactions between algebra and combinatorics.

- [62] Dmitrii V. Pasechnik. Affine extensions of the Petersen graph and 2-arc-transitive graphs of girth 5. *European J. Combin.*, 13(4):279–290, 1992.
- [63] Dmitrii V. Pasechnik. Dual linear extensions of generalised quadrangles. *European J. Combin.*, 12(6):541–548, 1991.
- [64] Irene V. Chuvaeva and Dmitrii V. Pasechnik. Distance-transitive graphs of type $q \cdot K_{q,q}$ and projective planes. *European J. Combin.*, 11(4):341–346, 1990.

Refereed conference proceedings papers

- [65] Swee Hong Chan, H. Hollmann, and D. V. Pasechnik. Circulant matrices and sandpile groups of generalized de Bruijn graphs. In *Proceedings of EuroComb 2013*, volume 16 of *Publications of the Scuola Normale Superiore*. 2013. arXiv.org e-print arXiv:1312.2114.
- [66] E. Elkind, D.V. Pasechnik, and M. Wooldridge. Strategic considerations in the design of committees. In *Proceedings of AAMAS 2013*, pages 439–446. 2013. <http://www.ifaamas.org/Proceedings/aamas2013/docs/p439.pdf>.
- [67] E. Elkind, D.V. Pasechnik, and Y. Zick. Dynamic weighted voting games. In *Proceedings of AAMAS 2013*, pages 515–522. 2013. <http://www.ifaamas.org/Proceedings/aamas2013/docs/p515.pdf>.
- [68] Dmitrii V. Pasechnik and Keshav Kini. A GAP/Sage package for computation with coherent configurations. In *Proceedings of Mini-Workshop Exploiting Symmetry in Optimization*, volume 7 of *Oberwolfach Reports*, pages 2251–2253. European Math. Soc., 2010.
- [69] Dmitrii V. Pasechnik and Keshav Kini. A GAP package for computation with coherent configurations. In *Proceedings of ICMS 2010*, volume 6327 of *Lecture Notes in Computer Science*, pages 69–72. Springer-Verlag, Berlin, 2010.
- [70] Yoram Bachrach, Edith Elkind, Reshef Meir, Dmitrii Pasechnik, Michael Zuckerman, Joerg Rothe, and Jeffrey Rosenschein. The cost of stability and its application to weighted voting games. In Maria Mavronicolas, Marios Papadoupoulou, editor, *Algorithmic Game Theory, 2nd International Symposium, SAGT 2009*, volume 5814 of *Lecture Notes in Comput. Sci.*, pages 122–134. Springer, Berlin, 2009.
- [71] E. Elkind and D.V. Pasechnik. Computing the nucleolus of weighted voting games. In Claire Mathieu, editor, *Proceedings of ACM-SIAM Symposium on Discrete Algorithms (SODA'09)*, pages 327–335. SIAM, New York, 2009.
- [72] Dima Grigoriev, Edward A. Hirsch, and Dmitrii Pasechnik. Exponential lower bound for static semi-algebraic proofs. In *Automata, languages and programming*, volume 2380 of *Lecture Notes in Comput. Sci.*, pages 257–268. Springer, Berlin, 2002.
- [73] Dima Grigoriev, Edward A. Hirsch, and Dmitrii V. Pasechnik. Complexity of semi-algebraic proofs. In *STACS 2002*, volume 2285 of *Lecture Notes in Comput. Sci.*, pages 419–430. Springer, Berlin, 2002.
- [74] Antoine Deza, Komei Fukuda, Dmitrii Pasechnik, and Masanori Sato. On the skeleton of the metric polytope. In *Discrete and computational geometry (Tokyo, 2000)*, volume 2098 of *Lecture Notes in Comput. Sci.*, pages 125–136. Springer, Berlin, 2001.

- [75] D. V. Pasechnik. On some locally 3-transposition graphs. In *Finite geometry and combinatorics (Deinze, 1992)*, volume 191 of *London Math. Soc. Lecture Note Ser.*, pages 319–325. Cambridge Univ. Press, Cambridge, 1993.
- [76] A. Munemasa, D. V. Pasechnik, and S. V. Shpectorov. A local characterization of the graphs of alternating forms and the graphs of quadratic forms over $\text{GF}(2)$. In *Finite geometry and combinatorics (Deinze, 1992)*, volume 191 of *London Math. Soc. Lecture Note Ser.*, pages 303–317. Cambridge Univ. Press, Cambridge, 1993.

Book chapters

- [77] E.de Klerk, F.M. de Oliveira Filho, and D. V. Pasechnik. Relaxations of combinatorial problems via association schemes. In M.F.Anjos and J.B.Lasserre, editors, *Handbook on Semidefinite, Cone and Polynomial Optimization*, volume 166 of *International Series in Operations Research and Management Science*, pages 171–199. Elsevier, 2012. e-print nr. 2010-07-2690 at Optimization online.

Preprints and technical reports

- [78] D. V. Pasechnik. The flow of code and patches in open source projects (report on opendreamkit d7.1), February 2017. <https://github.com/OpenDreamKit/OpenDreamKit/raw/master/WP7/D7.1/report-final.pdf>
- [79] D. V. Pasechnik. An efficient sum of squares nonnegativity certificate for quaternary quartic. *ArXiv e-print 1511.03473*, November 2015.
- [80] N. Gravin, D. Nguyen, D. Pasechnik, and S. Robins. The inverse moment problem for convex polytopes: implementation aspects. *ArXiv e-print 1409.3130*, September 2014.
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