

Jan Volec – Curriculum Vitae

Department of Mathematics and Statistics
McGill University
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Working experience

CRM-ISM fellow at McGill University, Montréal since September 2016
ETH Zürich, postdoctoral researcher September 2014–August 2016

Education

University of Warwick, PhD student in Mathematics (transferred from Charles University) 2013–2014
jointly with Université Paris Diderot (Paris 7), PhD student in Computer Science
awarded 2015 Warwick Faculty of Science Doctoral Thesis Award
Charles University in Prague, Faculty of Mathematics and Physics
Bachelor and Master student in Computer Science 2006–2011
PhD student in Computer Science jointly with Université Paris Diderot (Paris 7) 2011–2012
Participant of DIMACS-DIMATIA REU program, Rutgers University, NJ Summer 2008, 2009, 2011

Research Interests

Extremal and Probabilistic Combinatorics
Ramsey Theory
Structural Graph Theory

Research awards and funding

CRM-ISM Postdoctoral Fellowship, C\$41.000 p.a. 2016-2018
Campus France – scholarship for joint PhD studies in France, equiv. \$10.350 2012-2014
Charles University Student Grant (GAUK) – PI, equiv. \$12.650 2012

Student supervision

Adrian Binding – Master thesis, ETH Zürich (co-supervised with Benny Sudakov) defended August 2016
Martin Nägele – Bachelor thesis, ETH Zürich (co-supervised with Benny Sudakov) defended July 2015

Teaching experience – Research schools and lecture series

Flag Algebras and the Semidefinite method – lecturer LORIA Nancy, February–March 2014
Flag Algebras and the Semidefinite method – lecturer Emory University, September 2013
School of Advanced Science on Algorithms, Combinatorics and Optimization – exercises São Paulo, July 2016
Research School on Regularity and Analytic Methods in Combinatorics – exercises Warwick, July 2015

Teaching experience – lectures and seminar organization

Graph Theory and Combinatorics (MATH 350)	McGill University, Fall 2016
Organizer of Graph Limits Graduate Seminar	ETH Zürich, Spring 2015

Teaching experience – exercise classes

Teaching assistant for Expander Graphs and Their Applications course	ETH Zürich, Spring 2016
Teaching assistant for Algebra I course	ETH Zürich, Fall 2015
Teaching assistant for Topics of Mathematics in Computer Science course	ETH Zürich, Fall 2014
Teaching assistant for Discrete Mathematics and its Applications 1 course	Warwick, Fall 2013
Teaching assistant for Combinatorics and Graph Theory III course	Charles University, Fall 2011
Teaching assistant for Combinatorics and Graph Theory II course	Charles University, Fall 2011
Teaching assistant for Combinatorics and Graph Theory I course	Charles University, Spring 2009 and 2010
Teaching assistant for Discrete Mathematics course	Charles University, Fall 2008 and 2009

Publications

- J. Balogh, P. Hu, B. Lidický, F. Pfender, J. Volec, M. Young: *Rainbow triangles in three-colored graphs*, J. Combin. Theory Ser. B, accepted for publication.
- N. Kamčev, B. Sudakov, J. Volec: *Bounded colorings of multipartite graphs and hypergraphs*, European J. Combin., accepted for publication.
- B. Sudakov, J. Volec: *Properly colored and rainbow copies of graphs with few cherries*, J. Combin. Theory Ser. B 122 (2017), 391–416.
- J.-S. Sereni, J. Volec: *A note on acyclic vertex-colorings*, J. Comb. 7 (2016), 725–737.
- R. Glebov, D. Král', J. Volec: *A problem of Erdős and Sós on 3-graphs*, Israel J. Math. 211 (2016), 349–366.
- Z. Dvořák, J.-S. Sereni, J. Volec: *Fractional coloring of triangle-free planar graphs*, Electron. J. Combin. 22 (2015), #P4.11.
- X. Goaoc, A. Hubard, R. de Joannis de Verclos, J.-S. Sereni, J. Volec: *Limits of order types*, 31st International Symposium on Computational Geometry, Leibniz International Proceedings in Informatics 34 (2015), 300–314.
- J. Balogh, P. Hu, B. Lidický, O. Pikhurko, B. Udvari, J. Volec: *Minimum number of monotone subsequences of length 4 in permutations*, Combin. Probab. Comput. 24 (2015), 658–679.
- J. van den Heuvel, D. Král', M. Kupec, J.-S. Sereni, J. Volec: *Extensions of Fractional Precolorings show Discontinuous Behavior*, J. Graph Theory 77 (2014), 299–329.
- Z. Dvořák, J.-S. Sereni, J. Volec: *Subcubic triangle-free graphs have fractional chromatic number at most $14/5$* , J. Lond. Math. Soc. 89 (2014), 641–662.
- F. Kardoš, D. Král', J. Volec: *Maximum edge-cuts in cubic graphs with large girth and in random cubic graphs*, Random Structures Algorithms 41 (2012), 506–520.
- D. Král', M. Krnc, M. Kupec, B. Lužar, J. Volec: *Extending fractional precolorings*, SIAM J. Discrete Math. 26 (2012), 647–660.
- O. Bílka, J. Jirásek, P. Klavík, M. Tancer, J. Volec: *On the Complexity of Planar Covering of Small Graphs*, 37th Workshop on Graph-Theoretic Concepts in Computer Science, Lecture Notes in Computer Science 6986 (2011), 83–94.
- D. Král', P. Škoda, J. Volec: *Domination number of cubic graphs with large girth*, J. Graph Theory 69 (2012), 131–142.
- F. Kardoš, D. Král', J. Volec: *Fractional colorings of cubic graphs with large girth*, SIAM J. Discrete Math. 25 (2011), 1454–1476.

Submitted papers

- R. Glebov, D. Král', J. Volec: *Compactness and finite forcibility of graphons*, available as arxiv:1309.6695.
- A. Grzesik, P. Hu, J. Volec: *Minimum number of edges that occur in odd cycles*, available as arxiv:1605.09055.
- R. Glebov, A. Grzesik, P. Hu, T. Hubai, D. Král', J. Volec: *Densities of 3-vertex graphs*, available as arxiv:1610.02446.

Contributions at mathematical conferences with published proceedings

- B. Sudakov, J. Volec: *Properly colored and rainbow copies of graphs with few cherries*, proceedings of Eurocomb'15, Electronic Notes in Discrete Mathematics 49 (2015), 315–321.
- R. Glebov, D. Král', J. Volec: *A problem of Erdős and Sós on 3-graphs*, proceedings of Eurocomb'13, CRM Series 16 (2013), 3–8.
- Z. Dvořák, J.-S. Sereni, J. Volec: *Subcubic triangle-free graphs have fractional chromatic number at most $14/5$* , proceedings of Eurocomb'13, CRM Series 16 (2013), 497–502.
- R. Glebov, D. Král', J. Volec: *An application of flag algebras to a problem of Erdős and Sós*, Electronic Notes in Discrete Mathematics 43 (2013), 171–177.

Presentations at conferences and workshops

- AMS Fall Western Sectional Meeting, Denver CO, 2016
 * presentation invited by the "Recent Advances in Structural and Extremal Graph Theory" special session organizers
- AMS Fall Eastern Sectional Meeting, Brunswick ME, 2016
 * presentation invited by the "New Developments in Graphs and Hypergraphs" special session organizers
- SIAM Conference on Discrete Mathematics 2016, Atlanta
 * presentation invited by the "Graph Limits and Extremal Combinatorics" mini-symposium organizers
- 24th Workshop Cycles and Colourings 2015, Nový Smokovec
- 8th European Conference on Combinatorics, Graph Theory and Applications 2015 (Eurocomb '15), Bergen
- 17th International Conference on Random Structures and Algorithms 2015, Pittsburgh
- Adrian Bondy's 70th Birthday Conference, 2014
- ICMS Workshop on Extremal Combinatorics, Edinburgh, 2014
- SIAM Conference on Discrete Mathematics 2014, Minneapolis
 * presentation invited by the "Graph coloring" mini-symposium organizer
- Workshop in Combinatorics, Szeged, 2014
- 7th European Conference on Combinatorics, Graph Theory and Applications 2013 (Eurocomb '13), Pisa
- 16th International Conference on Random Structures and Algorithms 2013, Poznań
- 7th Czech-Slovak International Symposium on Graph Theory, Combinatorics, Algorithms and Applications 2013, Košice
- Erdős Centennial – poster session, Budapest, 2013
- DIMAP PhD Workshop 2013, Coventry
- Probabilistic methods in Graph Theory 2012, Birmingham
- Joint Mathematical Conference CSASC 2011, Krems
- 20th Workshop Cycles and Colourings 2011, Nový Smokovec
- 17th Midsummer Combinatorial Workshop 2011 (MCW), Prague

15th International Conference on Random Structures and Algorithms 2011, Atlanta
19th Workshop Cycles and Colourings 2010, Tatranská Štrba
Workshop on Extremal and Probabilistic Combinatorics 2010, Frauenchimsee
16th Midsummer Combinatorial Workshop 2010 (MCW), Prague
18th Workshop Cycles and Colourings 2009, Tatranská Štrba
14th International Conference on Random Structures and Algorithms 2009, Poznań
15th Midsummer Combinatorial Workshop 2009 (MCW), Prague

Seminar and other talks at universities

Discrete Mathematics Seminar, Iowa State University (April 2017)
Combinatorics seminar, University of West Bohemia (March 2017)
MALOTEC seminar, LORIA (March 2017)
Discrete Math Seminar, Georgia State University (March 2017)
Combinatorics Seminar, Emory University (February 2017)
Discrete Mathematics and Optimization Seminar, McGill University (November 2016)
Math and Stats graduate student seminar, McGill University (November 2016)
Seminário de Teoria da Computação, Combinatória e Otimização, University of São Paulo (August 2016)
Mittagseminar, ETH Zürich (June 2016)
Discrete Mathematics Seminar, Iowa State University (June 2016)
Séminaire de Mathématiques Discrètes, Grenoble INP (February 2016)
Combinatorics Seminar, University of Warwick (January 2016)
Graphes@Lyon, École Normale Supérieure de Lyon (December 2015)
Mittagseminar, ETH Zürich (September 2015)
Discrete Mathematics Seminar, Iowa State University (August 2015)
Combinatorics Seminar, University of Birmingham (June 2015)
Zürich Graduate Colloquium, ETH Zürich and University of Zürich (February 2015)
Mittagseminar, ETH Zürich (September 2014)
DIMAP Seminar, University of Warwick (May 2014)
Noon Seminar, Charles University in Prague (January 2014)
Algorithmic aspects of combinatorics Seminar, Jagiellonian University (December 2013)
Combinatorics Seminar, University of Warwick (October 2013)
Graph Theory and Combinatorics Seminar, University of Illinois at Urbana-Champaign (October 2013)
Combinatorics seminar, Georgia Institute of Technology (September 2013)
Combinatorics Seminar, Emory University (September 2013)
Graph Theory and Combinatorics Seminar, University of Illinois at Urbana-Champaign (May 2013)

Combinatorics Seminar, University of Illinois at Chicago (May 2013)
MIT combinatorics seminar, Massachusetts Institute of Technology (May 2013)
Combinatorics, Graph Theory and Applications Seminar, UPC – BarcelonaTech (April 2013)
Seminarium, Adam Mickiewicz University in Poznań (April 2013)
Combinatorics Study Group, Queen Mary University of London (March 2013)
Selected Topics in Graph Theory II, University of Illinois at Urbana-Champaign (March 2013)
Combinatorics Seminar, University of Warwick (March 2013)
Seminar on Graph Theory and Algorithms, University of Ljubljana (October 2011)

References

Prof. Dan Král' (University of Warwick), email: d.kral@warwick.ac.uk	<i>PhD co-advisor</i>
Dr. Jean-Sébastien Sereni (CNRS), email: jean-sebastien.sereni@loria.fr	<i>PhD co-advisor</i>
Prof. Oleg Pikhurko (University of Warwick), email: o.pikhurko@warwick.ac.uk	<i>Research collaborator</i>
Prof. Benny Sudakov (ETH Zürich), email: benny.sudakov@gmail.com	<i>Postdoc supervisor</i>

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