

# Nicolas Trotignon

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1	Employment history . . . . .	1
2	Education . . . . .	2
3	Administrative Duties . . . . .	2
4	Student supervision . . . . .	3
	4.1 Postdoc supervision . . . . .	3
	4.2 PhD supervision . . . . .	3
	4.3 Undergraduate student supervision . . . . .	3
5	Science management . . . . .	4
	5.1 Grants . . . . .	4
	5.2 Events organisation . . . . .	4
	5.3 Short stays abroad . . . . .	5
	5.4 PhD committees . . . . .	5
	5.5 Miscellaneous . . . . .	6
6	Teaching . . . . .	6
7	Publications . . . . .	8
8	Talks . . . . .	13
9	Other . . . . .	18

## 1 Employment history

### 1998–1999

Teacher of mathematics, Lycée Charles de Gaulle, Rosny-sous-Bois, France

### 1999–2005

Teacher of mathematics, Université Pierre-Mendès-France

Grenoble 2, France

### 2005–2008

Assistant professor, Université Panthéon-Sorbonne, Paris 1, France

### 2008– 2011

Researcher at CNRS, LIAFA, Université Paris-Diderot, Paris 7, France

### 2011– present

Researcher at CNRS, LIP, École Normale Supérieure de Lyon

France (since 2015, senior researcher)

## 2 Education

### 1995

Degree in Statistics and Economy at ENSAE (National School of Statistics and Economic Administration).

### 1997

Agrégation de Mathématiques (French competitive exam for teachers in high schools and universities).

### 2001

Master in Operation Research and Combinatorics, Joseph Fourier University, Grenoble.

Magna Cum Laude. Master Thesis : *The compactness argument in Combinatorics*. Supervisor Sylvain Gravier.

### 2004

Doctoral Dissertation in Mathematics and Computer Science.

*Perfect Graphs: Structure and Algorithms*,

Joseph -Fourier University, Grenoble 1, Leibniz Laboratory, IMAG, Grenoble, France.

Defended the 28<sup>th</sup> of September 2004.

Committee : F. Maffray (advisor), G. Cornuéjols (referee), B. Reed (referee), M. Burolet, J. Fonlupt and J.-L. Fouquet.

### 2009

Habilitation thesis (HDR)

*Structure of classes of graphs defined by forbidding induced subgraphs*,

University Paris-Diderot, Paris 7, LIAFA,

Paris, France.

Defended the 15<sup>th</sup> of December 2009.

Committee: M. Chudnovsky (referee), M. Conforti (referee), J.-P. Delahaye, M. Habib (referee), F. Maffray, S. Thomassé (referee).

## 3 Administrative Duties

### 2003 – 2004

Member of the departemental committee, Leibniz laboratory.

### 2014 – 2015

Team leader for team MC2, LIP.

### 2015 – 2018

Head of the computer science department of ENS de Lyon.

### 2017 – present

Member of comité de pilotage des EPIT.

### 2021 – present

Head of LIP.

## 4 Student supervision

### 4.1 Postdoc supervision

- Raphael Machado, Université Paris 7. December 2010–January 2011.
- Irena Penev, École Normale Supérieure de Lyon. 2013–2015.
- Nick Brettell, École Normale Supérieure de Lyon. 2014–2015.

### 4.2 PhD supervision

- Pierre Aboulker, Université Paris 7. *Excluding slightly more than a hole*, defended on June 24, 2013.
- Théophile Trunck, École Normale Supérieure de Lyon. *Trigraphes de Berge apprivoisés*, defended on September 17, 2014.
- Khang Le, École Normale Supérieure de Lyon. *Detecting and Coloring some Graph Classes*, defended on June 8, 2018.
- Ni Luh Dewi Sintiar, École Normale Supérieure de Lyon. In progress.
- Cléopée Robin, Université Grenoble Alpes, supervised jointly with Myriam Preissmann. In progress.
- Pegah Pournajafi, École Normale Supérieure de Lyon. In progress.

### 4.3 Undergraduate student supervision

- Master in Computer Science, Joseph Fourier University, Grenoble. *Study of self-complement graphs*, by Lætitia Boiron, 2004.
- Master in Computer Science, Joseph Fourier University, Grenoble. *Generating self-complement graphs*, by Sylvain Bauchau, 2005.
- Master in Computer Science, Joseph Fourier University, Grenoble. *Detecting induced subgraphs*, by Zhang Mei, 2005.
- Master in Operation Research, University Paris 1, Paris. *Searching graphs*, by Khaled Kadi, 2008.
- Master in Operation Research and Combinatorics, University Grenoble 1 Joseph Fourier, Grenoble. *Detecting induced trees*, by Liu Wei, 2009.
- Master Recherche Advanced Mathematics, École normale supérieure de Lyon. *Some simple cases of Scott's conjecture*, by Amine Abdelkader, 2009.
- Master de mathématiques et applications, OJME, University Paris 6 Pierre et Marie Curie, *Structure of wheel-free graphs*, by Pierre Aboulker, 2010.
- Théophile Trunck. Master d'informatique fondamentale, École Normale Supérieure de Lyon, 2011.
- Lan Anh Pham. Master d'informatique fondamentale, École Normale Supérieure de Lyon, 2015.

- Edin Husic. Master d’informatique fondamentale, École Normale Supérieure de Lyon, 2017.
- Ni Luh Dewi Sintari, Master d’informatique fondamentale, École Normale Supérieure de Lyon, 2018.
- Pegah Pournajafi, Master d’informatique fondamentale, École Normale Supérieure de Lyon, 2018.

## 5 Science management

### 5.1 Grants

- PHC Pavle Savić grant, jointly awarded by EGIDE, an agency of the French Ministère des Affaires étrangères et européennes, and Serbian Ministry for Science and Technological Development, 2010.
- Member of Project 174033, supported by the Ministry of Science, Technology and Development, Republic of Serbia. Graph theory and mathematical programming with applications to chemistry and computer science. Leader: Slobodan Simić
- Member of ANR jeune chercheur Heredia, 2011–2014.
- Head of ANR Stint, 2014–2017.
- Local head of ANR DIGRAPH, 2020–2024 (head: Frédéric Havet).

### 5.2 Events organisation

- Organisation of the Discrete Mathematics Seminar of Leibniz Laboratory, Grenoble, 2003–2005.
- Organisation of the workshop on the “lonely runner” conjecture, Grenoble, may 2004.
- Organisation of the mini-symposium “graph theory and combinatorial optimization”, Congrès de la SMAI, june 2007.
- Creation and organisation of the Seminar “MDOD”, Université Panthéon-Sorbonne, 2007–2008.
- Organisation of the Seminar “Algorithmique et Combinatoire”, LIAFA, Paris, 2008–2011.
- Organisation of “A one-day conference on structural graph theory”, LIAFA, Paris, January 2011.
- Organisation of a Workshop on  $\chi$ -bounded classes, LIP, ENS Lyon, March 2012.
- Organisation of a Workshop on  $\chi$ -bounded classes, LIP, ENS Lyon, March 2012.

- Organisation of “Rencontres Internationales sur les méthodes de décomposition de graphes”, CIRM, Marseille, 19–23 January 2015, co-organised with Stephan Kreutzer (University of Berlin) Christophe Paul (CNRS - Université Montpellier) and Paul Wollan (University of Rome).
- Organisation of the Graph@Lyon Seminar, Université de Lyon, 2015–2018. Co-organised with Aline Parreau.
- Co-chair of ICGT 2018, organized in Lyon, July 2018.
- Organizer of Seymour is Seventy, Lyon, June 2020 (postponed to June 2022 because of the covid crisis).

### 5.3 Short stays abroad

- Universidade Federal do Rio de Janeiro, Brasil, November 2008.
- University of Oxford, England, February 2010.
- Union University, Belgrad, Serbia, June 2010.
- Nihon University, Tokyo, Japan, July 2010.
- Union University, Belgrad, Serbia, February 2011.
- Université Libre de Bruxelles, Belgium, March 2011.
- Union University, Belgrad, Serbia, November 2011.
- Leeds University, Leeds, England, October 2012.
- Leeds University, Leeds, England, May 2016.

### 5.4 PhD committees

- Member of the committee of the thesis of Nicolas Dehry, defended in December 2008. *Multicoupes et sous-graphes induits : complexité et algorithmes.*
- Member of the committee of the thesis of H el ene Topart, defended in May 2011. * tude d’une nouvelle classe de graphes : les hypotriangul es.*
- Member of the committee of the thesis of Marwane Bouznif, defended in July 2012. *Algorithmes g en eriques en temps constant pour la r esolution de probl emes combinatoires dans la classe des rotagraphes et fasciagraphes. Applications aux codes identifiants, dominants-localisateurs et dominants-total-localisateurs.*
- Member of the committee of the thesis of Petru Valicov, defended in July 2012. *Probl emes de placement, de coloration et d’identification.*
- Member (referee) of the committee of the thesis of Antoine Mamcarz, defended in June 2014. *About graph decompositions of trigraphs and graph searches.*
- Member (referee) of the committee of the thesis of Ana Karolina Maia de Oliveira, defended in November 2014. *Subdivisions of digraphs.*
- Member of the committee of the thesis of Johann Benchetrit, defended in May 2015. *Propri et es g eom etriques du nombre chromatique : poly edres,*

*structure et algorithmes.*

- Member of the committee of the thesis of Jean-Florent Raymond, defended in November 2016. *Structural and algorithmic aspects of partial orderings of graphs.*
- Member (referee) of the committee of the thesis of Andrea Munaro, defended in December 2016. *Sur quelques invariants classiques et nouveaux des hypergraphes.*
- Member of the committee of the thesis of Lucas Pastor, defended in November 2017. *Coloration, ensemble indépendant et structure de graphe.*
- Member (referee) of the committee of the habilitation of Jean-Sébastien Sereni, defended in February 2018. *Sur des aspects algébriques de la coloration de graphes : coloration fractionnaire et nombre de colorations.*
- Member (referee) of the committee of the thesis of Alexis Cornet, defended in December 2018. *Algorithmes et résultats de complexité pour des problèmes de graphes avec contraintes additionnelles.*
- Member (referee) of the committee of the thesis of Benjamin Bergougnoux, defended in February 2019. *Matrix Decompositions and Algorithmic Applications to (Hyper)Graphs.*
- Member of the committee of the thesis of Lucas Isenmann, defended in December 2019. *Des graphes planaires vers des plus hautes dimensions.*
- Member (referee) of the committee of the thesis of Samuel Mohr, defended in August 2020. *Rooted structures in graphs.*
- Member (referee) of the committee of the habilitation of Vincent Limouzy, defended in January 2021. *From graph classes to enumeration of minimal dominating sets.*
- Member of the committee of the thesis of Paul Ouvrard, defended in March 2021. *Problèmes de reconfiguration dans les graphes.*

## 5.5 Miscellaneous

- Member of “comité de pilotage de la Maison des Mathématiques et de l’Informatique”.
- Referee for several journals including *Journal of Combinatorial Theory Series B*, *Journal of Graph Theory*, *Discrete Mathematics*, *Discrete Applied Mathematics*, *Applicable Analysis and Discrete Mathematics*.
- 2014 – 2016. Member of the committee for prix de thèse “Gilles Kahn” de la SIF.

## 6 Teaching

### 1992 – 1998

Tutorial classes in preparatory classes for french “Grandes Écoles” (Lycées Charlemagne, Lavoisier and Chaptal, Paris) : Mathematics, Maple and programming in Pascal.

**1995 – 1998**

Tutorial classes at ENSAE: Unix System, Linear Algebra, project follow up in C Language.

**1998 – 1999**

High School teacher in Mathematics, Charles-de-Gaulle High School, Rosny-sous-Bois, France.

**1999 – 2004**

Full time teaching position as Professeur agrégé at University Pierre Mendès France, Grenoble 2, France. Various courses (globally more than 1,000 hours) including:

- Mathematics: Linear Algebra, Arithmetics, Boolean Calculus.
- Statistics: Probability, Statistical Tests, Analysis of Variance.
- Computer Science : Decidability, Turing Machines, Automatas, Algorithms, Programming in Java and Pascal.

**2005 – 2008**

Assistant Professor at University Paris 1, Panthéon-Sorbonne, Paris, France. Various courses:

- Mathematics: graph theory, combinatorial optimisation, linear programming, optimisation on convex sets. Linear algebra (teaching in english).
- Computer Science: programming in C, programming in C++ for finance (teaching in english).

**2008 – 2011**

Course “graphes et optimisation combinatoire”, master second year, at University Paris 1, Panthéon-Sorbonne, Paris, France (until 2010).

Course “algorithmes avancés”, master second year MPRI, University Paris 7, Paris Diderot, France (until 2011).

Course for PhD students in Science about outreaching toward highschool students, Université de Lyon, 2012–2014.

**2013 – 2015**

Course “Graphs and polynomials”, master second year Master d’Informatique Fondamentale, jointly with Pascal Koiran and Stéphan Thomassé, ENS de Lyon.

**2016 – 2018**

Course “Graph decompositions: From Tree-Width to Perfect Graphs”, second year Master d’Informatique Fondamentale, jointly with Stéphan Thomassé, ENS de Lyon.

**2018 – 2020**

Course “Principles of fundamental computer science”, second year Master of physics, complex systems, ENS de Lyon.

## 7 Publications

### List of publications on DBLP

<https://dblp.org/pers/hd/t/Trotignon:Nicolas>

### Link to download papers

<http://perso.ens-lyon.fr/nicolas.trotignon/articles.html>

### Articles published in journals

- [1] S. Gravier, F. Maffray, J. Renault, and N. Trotignon. Ramsey-type results on singletons, co-singletons and monotone sequences in large collections of sets. *European Journal of Combinatorics*, 25(5):719–734, 2004. arXiv:1308.5849
- [2] F. Maffray and N. Trotignon. Algorithms for perfectly contractile graphs. *SIAM Journal on Discrete Mathematics*, 19(3):553–574, 2005. arXiv:1309.0435
- [3] F. Maffray and N. Trotignon. A class of perfectly contractile graphs. *Journal of Combinatorial Theory, Series B*, 96(1):1–19, 2006. arXiv:1309.0438
- [4] M. Burlet, F. Maffray, and N. Trotignon. Odd pairs of cliques. In A. Bondy, J. Fonlupt, J-L. Fouquet, J-C. Fournier, and J. L. Ramírez Alfonsín, editors, *Graph Theory in Paris, Proceedings of a Conference in Memory of Claude Berge*, pages 85–95. Birkhäuser, 2007. arXiv:1309.0449
- [5] N. Trotignon. Decomposing Berge graphs and detecting balanced skew partitions. *Journal of Combinatorial Theory, Series B*, 98(1):173–225, 2008. arXiv:1309.0680
- [6] F. Maffray, N. Trotignon, and K. Vušković. Algorithms for square- $3PC(\cdot, \cdot)$ -free Berge graphs. *SIAM Journal on Discrete Mathematics*, 22(1):51–71, 2008. arXiv:1309.0694
- [7] B. Lévêque, F. Maffray, B. Reed, and N. Trotignon. Coloring Artemis graphs. *Theoretical Computer Science*, 410:2234–2240, 2009. arXiv:cs/0504082
- [8] B. Lévêque, D. Lin, F. Maffray, and N. Trotignon. Detecting induced subgraphs. *Discrete Applied Mathematics*, 157:3540–3551, 2009. arXiv:1309.0971
- [9] N. Derhy, C. Picouleau and N. Trotignon. The four-in-a-tree problem for triangle-free graphs. *Graphs and Combinatorics*, 25:489–502, 2009. arXiv:1309.0978
- [10] N. Trotignon and K. Vušković. A structure theorem for graphs with no cycle with a unique chord and its consequences. *Journal of Graph Theory*, 63(1):31–67, 2010. arXiv:1309.0979
- [11] W. Liu and N. Trotignon. The  $k$ -in-a-tree problem for graphs of girth at least  $k$ . *Discrete Applied Mathematics*, 158:1644–1649, 2010. arXiv:1309.1279
- [12] N. Trotignon and K. Vušković. On Rousset–Rubio-type lemmas and their consequences. *Discrete Mathematics*, 311(8–9):684–687, 2011.



arXiv:1309.1284

- [13] M. Pouzet, H. Si Kaddour and N. Trotignon. Claw-freeness, 3-homogeneous subsets of a graph and a reconstruction problem. *Contributions to Discrete Mathematics*, 6(1):92–103, 2011. arXiv:1309.1835
- [14] N. Trotignon and K. Vušković. Combinatorial optimization with 2-joins. *Journal of Combinatorial Theory, Series B*, 102:153–185, 2012. arXiv:1309.1547
- [15] B. Lévêque, F. Maffray, and N. Trotignon. On graphs with no induced subdivision of  $K_4$ . *Journal of Combinatorial Theory, Series B*, 102:924–947, 2012. arXiv:1309.1926
- [16] J. Bang-Jensen, F. Havet and N. Trotignon. Finding an induced subdivision of a digraph. *Theoretical Computer Science*, 443:10–24, 2012. arXiv:1309.1553
- [17] M. Chudnovsky, I. Penev, A. Scott and N. Trotignon. Excluding induced subdivisions of the bull and related graphs. *Journal of Graph Theory*, 71:49–68, 2012. arXiv:1309.1312
- [18] A. Gyárfás, A. Sebő and N. Trotignon. The chromatic gap and its extremes. *Journal of Combinatorial Theory, Series B*, 102:1155–1178, 2012. arXiv:1108.3444
- [19] P. Aboulker, M. Radovanović, N. Trotignon and K. Vušković. Graphs that do not contain a cycle with a node that has at least two neighbors on it. *SIAM Journal on Discrete Mathematics*, 26(4):1510–1531, 2012. arXiv:1309.1841
- [20] P. Charbit, M. Habib, N. Trotignon and K. Vušković. Detecting 2-joins faster. *Journal of Discrete Algorithms*, 17:60–66, 2012. arXiv:1107.3977
- [21] R.C.S. Machado, C.M.H. de Figueiredo and N. Trotignon. Edge-colouring and total-colouring chordless graphs, *Discrete Mathematics*, 313:1547–1552, 2013. arXiv:1309.1842
- [22] A. Gyárfás, Z. Li, R. Machado, A. Sebő, S. Thomassé and N. Trotignon. Complements of nearly perfect graphs. *Journal of Combinatorics*, 4(3):299–310, 2013. arXiv:1304.2862
- [23] M. Chudnovsky, I. Penev, A. Scott and N. Trotignon. Substitutions and  $\chi$ -boundedness. *Journal of Combinatorial Theory, Series B*, 103(5):567–586, 2013. arXiv:1302.1145
- [24] M. Chudnovsky, P. Seymour and N. Trotignon. Detecting an induced net subdivision. *Journal of Combinatorial Theory, Series B*, 103(5):630–641, 2013. DOI:10.1016/j.jctb.2013.07.005 arXiv:1309.1960
- [25] P. Aboulker, M. Radovanović, N. Trotignon, T. Trunck and K. Vušković. Linear balanceable and subcubic balanceable graphs. *Journal of Graph Theory*, 75(2):150–166, 2014. DOI:10.1002/jgt.21728 arXiv:1302.1145
- [26] R.C.S. Machado, C.M.H. de Figueiredo and N. Trotignon. Complexity of colouring problems restricted to unichord-free and {square,unichord}-free graphs. *Discrete Applied Mathematics*, 164(1):191–199, 2014.

- DOI:10.1016/j.dam.2012.02.016 arXiv:1309.2749
- [27] E. Diot, S. Tavenas and N. Trotignon, Detecting wheels. *Applicable Analysis and Discrete Mathematics*, 8:111–122, 2014. DOI:10.2298/AADM131128023D arXiv:1308.6433
- [28] P. Aboulker, P. Charbit, N. Trotignon, and K. Vušković, Vertex elimination orderings for hereditary graph classes. *Discrete Mathematics* 338:825–834, 2015. DOI:10.1016/j.disc.2014.12.014 arXiv:1205.2535
- [29] P. Aboulker, M. Chudnovsky, P. Seymour and N. Trotignon, Wheel-free planar graphs. *European Journal of Combinatorics* 49:57–67, 2015. DOI:10.1016/j.ejc.2015.02.027 arXiv:13097120
- [30] M. Chudnovsky, N. Trotignon, T. Trunck and K. Vušković, Coloring perfect graphs with no balanced skew-partitions. *Journal of Combinatorial Theory, Series B* 115:26–65, 2015. DOI:10.1016/j.jctb.2015.04.007 arXiv:1308.6444
- [31] P. Charbit, I. Penev, S. Thomassé and N. Trotignon. Perfect graphs of arbitrarily large clique-chromatic number. *Journal of Combinatorial Theory, Series B*, 116:456–464, 2016. DOI:10.1016/j.jctb.2015.09.008 arXiv:1506.08628
- [32] I. Penev, S. Thomassé and N. Trotignon. Isolating highly connected induced subgraphs. *SIAM Journal on Discrete Mathematics*, 30:592–619, 2016. DOI:10.1137/140981939 arXiv:1406.1671
- [33] S. Thomassé, N. Trotignon, and K. Vušković. A Polynomial Turing-kernel for weighted independent set in bull-free graphs. *Algorithmica*, 77:619–641, 2017. DOI:10.1007/s00453-015-0083-x. arXiv:1310.6205
- [34] N. Trotignon, and K. Vušković. On triangle-free graphs that do not contain a subdivision of the complete graph on four vertices as an induced subgraph. *Journal of Graph Theory*, 84(3):233–248, 2017. DOI:10.1002/jgt.22023 arXiv:1407.6531
- [35] M. Milanič and N. Trotignon. Equistearable graphs and counterexamples to three conjectures on equistable graphs. *Journal of Graph Theory*, 84(3):536–551, 2017. DOI:10.1002/jgt.22040 arXiv:1407.1670
- [36] P. Aboulker, N. Brettell, F. Havet, D. Marx, N. Trotignon. Colouring graphs with constraints on connectivity. *Journal of Graph Theory*, 85(4):814–838, 2017. DOI:10.1002/jgt.22109 arXiv:1505.01616
- [37] I. Adler, N.K. Le, H. Müller, M. Radovanović, N. Trotignon and K. Vušković. On rank-width of even-hole-free graphs, *Discrete Mathematics & Theoretical Computer Science*, 19(1), 2017. 10.23638/DMTCS-19-1-24 arXiv:1611.09907
- [38] M. Milanič, I. Penev, and N. Trotignon. Stable sets in {ISK4, wheel}-free graphs. *Algorithmica*, 80(2):415–447, 2018. DOI:10.1007/s00453-016-0255-3 arXiv:1602.02916
- [39] L.A. Pham and N. Trotignon.  $\chi$ -bounds, operations and chords, *Journal of Graph Theory* 88(2):312–336, 2018. DOI:10.1002/jgt.22214

arXiv:1608.07413

[40] M. Chudnovsky, C.-H. Liu, O. Schaudt, S. Spirkl, N. Trotignon and K. Vušković. Triangle-free graphs that do not contain an induced subdivision of  $K_4$  are 3-colorable, *Journal of Graph Theory*, 92(2):67–95, 2019. DOI:10.1002/jgt.22441 arXiv:1704.08104

[41] M. Chudnovsky, I. Lo, F. Maffray, N. Trotignon and K. Vušković. Coloring Square-free Berge Graphs. *Journal of Combinatorial Theory, Series B* 135:96–128, 2019. DOI:10.1016/j.jctb.2018.07.010 arXiv:1509.09195

[42] E. Diot, M. Radovanović, N. Trotignon and K. Vušković. The (theta, wheel)-free graphs. Part I: only-prism and only-pyramid graphs. *Journal of Combinatorial Theory, Series B* 143:123–147, 2020. DOI:10.1016/j.jctb.2017.12.004 arXiv:1504.01862

[43] M. Radovanović, N. Trotignon and K. Vušković. The (theta, wheel)-free graphs. Part II: structure theorem. *Journal of Combinatorial Theory, Series B* 143:148–184, 2020. DOI:10.1016/j.jctb.2019.07.004 arXiv:1703.08675

[44] M. Radovanović, N. Trotignon and K. Vušković. The (theta, wheel)-free graphs. Part III: cliques, stable sets and coloring. *Journal of Combinatorial Theory, Series B* 143:185–218, 2020. DOI:10.1016/j.jctb.2019.07.003 arXiv:1707.04205

[45] M. Radovanović, N. Trotignon and K. Vušković. The (theta, wheel)-free graphs Part IV: induced paths and cycles. *Journal of Combinatorial Theory, Series B*, 146:495–531, 2021. DOI:10.1016/j.jctb.2020.06.002 arXiv:1912.00516

[46] M. Preissmann, C. Robin and N. Trotignon. *On the complexity of colouring antiprismatic graphs*. *Algorithmica*, 83(2):589–612, 2021. DOI:10.1007/s00453-020-00767-7 arXiv:1910.11001

### Articles to appear in journals

- N.L.D. Sintiari and N. Trotignon. *(Theta, triangle)-free and (even hole,  $K_4$ )-free graphs. Part 1: layered wheels*, 2019. To appear in *Journal of Graph Theory*. arXiv:1906.10998
- M. Pilipczuk, N.L.D. Sintiari, S. Thomassé and N. Trotignon. *(Theta, triangle)-free and (even hole,  $K_4$ )-free graphs. Part 2: bounds on treewidth*, 2020. To appear in *Journal of Graph Theory*. arXiv:2001.01607
- P. Aboulker, I. Adler, E.J. Kim, N.L.D. Sintiari and N. Trotignon. *On the tree-width of even-hole-free graphs*, 2020. To appear in *European Journal of Combinatorics*. arXiv:2008.05504

### Articles submitted to journals

- T. Abrishami, M. Chudnovsky, C. Dibek, S. Thomassé, N. Trotignon and K. Vušković. *Graphs with polynomially many minimal separators*, 2020. Submitted. arXiv:2005.05042
- C.T. Hoàng and N. Trotignon. *A class of graphs with large rankwidth*, 2020. Submitted. arXiv:2007.11513

### Articles to be submitted to journals

- P. Pournajafi and N. Trotignon. *Burling graphs revisited - Part 1 New characterizations*, 2021. arXiv:2104.07001

### Manuscripts (not to be submitted)

- N. Trotignon. *On the structure of self-complementary graphs*, 2004. arXiv:1308.6139
- P. Aboulker, F. Havet and N. Trotignon. *On wheel-free graphs*, 2011. arXiv:1309.2113
- N. Trotignon. *Perfect graphs: a survey*, 2013. arXiv:1301.5149.
- M. Milanić, I. Penev, and N. Trotignon. *A decomposition theorem for  $ISK_4$ , wheel-free trigraphs*, 2016. arXiv:1602.02406
- N.K. Le and N. Trotignon. *Connected greedy colouring in claw-free graphs*, 2018. arXiv:1805.01953
- L. Esperet and N. Trotignon. *Coloring graphs with no induced subdivisions of  $K_4^+$* , 2019. arXiv:1901.04170
- M. Chudnovsky, S. Thomassé, N. Trotignon and K. Vušković. *Maximum independent sets in (pyramid, even hole)-free graphs*, 2019. arXiv:1912.11246

### Book's chapters

- N. Trotignon, LexBFS, Structure, and Algorithms, in *Encyclopedia of Algorithms*, edited by M.-Y. Kao, Springer, 2015.
- N. Trotignon, Perfect graphs, in *Topics in Chromatic Graph Theory*, edited by L.W. Beineke and R.J. Wilson, Cambridge University Press, 2015.

### Dissertations

- N. Trotignon. *Pascal, Fermat et la géométrie du hasard*. IUFM de Créteil, 1999. Supervisor E. Barbin. arXiv:1309.2824
- N. Trotignon. *Graphes parfaits : structure et algorithmes*. PhD thesis, Université Joseph Fourier — Grenoble I, 2004. Supervisor F. Maffray. arXiv:1309.0119
- N. Trotignon. *Structure of classes of graphs defined by forbidding induced subgraphs*. Habilitation thesis, Université Paris Diderot — Paris 7, 2009. arXiv:1308.6678
- N. Trotignon. *Sur le théorème des trois distances et la construction des gammes*. Mémoire de formation musicale, École Nationale de Musique de Villeurbanne, 2015. arXiv:1505.05380

### Extended abstracts in proceedings of conferences

- F. Maffray, N. Trotignon, and K. Vušković. Algorithms for  $3PC(\cdot, \cdot)$ -free Berge graphs. *Electronic Notes in Discrete Mathematics*, 22:73–77, 2005. ICGT'05, extended abstract.

- N. Trotignon. On the structure of self-complementary graphs. *Electronic Notes in Discrete Mathematics*, 22:79–82, 2005. ICGT’05, extended abstract.
- B. Lévêque, D.Y. Lin, F. Maffray and N. Trotignon. Detecting induced subgraphs. *Electronic Notes in Discrete Mathematics*, 29:207–211, 2007.
- R. Machado, C.M.H. de Figueiredo and N. Trotignon. Chromatic Index of Chordless Graphs. In *9th Cologne-Twente Workshop on Graphs and Combinatorial Optimization, Cologne, Germany, May 25-27, 2010. Extended Abstracts*, 2010
- S. Thomassé, N. Trotignon and K. Vušković. A Polynomial Turing-Kernel for Weighted Independent Set in Bull-Free Graphs. In *Graph-Theoretic Concepts in Computer Science - 40th International Workshop, WG 2014, Nouan-le-Fuzelier, France, June 25–27. 2014*
- E. Husić, S. Thomassé and N. Trotignon. *The independent set problem is FPT for even-hole-free graphs*, IPEC 2019:21:1-21:12 arXiv:1907.01083

## 8 Talks

### Plenary talks

- Journées Graphes Algorithmes, Clermont-Ferrand, France, November 2012. *Théorèmes de décomposition et dégénérescence*.
- The Combinatorial Optimization Workshop, Aussois, France, January 2016, organised by K. Aardal, M. Conforti and F. Margot. *Recent progress on coloring perfect graphs (in a combinatorial way)*.
- Workshop Franco-brésilien de Graphes et Optimisation Combinatoire, March 2016, organised by C. Linhares Sales and F. Havet. *Recent progress on coloring perfect graphs*.

### Invited talks

- Workshop on Graph Theory, Mathematisches Forschungsinstitut, Oberwolfach, Germany, March 2007, organised by R. Diestel, A. Schrijver and P. Seymour. *Decomposing Berge graphs and detecting balanced skew partitions*
- Session on Structural Graph Theory, Spring Southeast Sectional Meeting of the AMS, Baton Rouge, USA, March 2008. Organised by M. Chudnovsky. *On graphs that do not contain a cycle with a unique chord*.
- JSPOC5, honoring Jack Edmonds’ 75th birthday, Paris, France, April 2009. Organised by K. Cameron and A. R. Mahjoub. *Even pairs in Berge graphs*.
- Workshop on Graph Colouring and Structure, Princeton, USA, May 2009. Organised by M. Chudnovsky, P. Seymour and R. Thomas. *Berge graphs with no balanced skew partition and no homogeneous pair*.
- Workshop on Graphs and Algorithms, Bertinoro, Italy, December 2009. Organised by M. Chudnovsky, K. Kawarabayashi and P. Wollan. *The  $k$ -in-a-tree problem for graphs of girth at least  $k$* .

- Workshop on Graph Colouring, Haifa, Israël, August 2010. Organised by R. Aharoni, E. Berger and M. Chudnovsky. *Excluding subdivisions of a bull.*
- Centenary of Celina de Figueiredo and Frédéric Maffray, Grenoble, France, September 2010. Organised by L. Esperet, M. Preissmann, A. Sebő and Z. Szigeti. *Perfect graphs: many old things and several new things.*
- 2nd Workshop on Graph Decompositions, Theoretical, Algorithmic and Logical Aspects, CIRM, Luminy, France, October 2010. Organised by C. Paul. *Seven open questions about detecting induced subgraphs.*
- Danish Graph Theory Meeting, Kolding, Denmark, April 2011. Organised by J. Bang-Jensen, M. Kriesell and B. Toft. *Decomposition theorems for classes of graphs defined by constraints on connectivity.*
- Workshop on Graphs and Algorithms, Bertinoro, Italy, December 2011. Organised by M. Chudnovsky, K. Kawarabayashi and P. Wollan. *Optimizing in Berge trigraphs.*
- VMS-SMF Joint Congress, session Discrete Mathematics, Hue, Vietnam, August 2012. Organised by C. Crespelle and Phan Thi Ha Duong. *Coloring Berge graphs with no balanced skew partitions.*
- Danish Graph Theory Meeting, Nyborg, Denmark, November 2012. Organised by J. Bang-Jensen and B. Toft. *Decomposition theorems and degeneracy.*
- EPSRC Durham Symposium Graph Theory and Interactions, England, July 2013. Organised by P. Cameron, N. Peyerimhoff and A. Vdovina. *Truemper configurations.*
- Workshop on Graphs and Algorithms, Bertinoro, Italy, December 2013. Organised by M. Chudnovsky, K. Kawarabayashi and P. Wollan. *The stable set problem is FPT in bull-free graphs.*
- Meeting in honor of András Sebő, Grenoble, France, april 2014. Organised by N. Brauner, V. Jost, F. Maffray, F. Meunier, M. Preissmann and Z. Szigeti. *Isolating highly connected induced subgraphs.*
- STRUCO meeting on Graph theory and sparse structures, Prague, October 2014. Organised by P. Charbit and J. Nešetřil. *Isolating highly connected induced subgraphs.*
- Coloring graphs at the Technion, Haifa, Israël, July 2015. Organised by R. Aharoni, E. Berger, M. Chudnovsky and R. Meshulam.  *$\chi$ -boundedness and chords.*
- Geometric and Structural Graph Theory, Banff, Canada, August 2017. Organised by B. Mohar, J. Pach et P. Seymour. *Polynomial  $\chi$ -boundedness.*
- Danish Graph Theory Meeting, Nyborg, Denmark, August 2018. Organised by J. Bang-Jensen and B. Toft. *Connected greedy colouring in claw-free graphs.*
- 40 Years of Graphs and Algorithms, a conference in celebration of the achievements of Michel Habib, on the occasion of his retirement, Paris, France, October 2018. Organised by P. Charbit V. Limouzy R. Naserasr L. Nourine and C. Paul. *The induced linkage problem.*

- Barbados Graph Theory Workshop, Holetown, Barbados, April 2019. Organized by S. Norin, P. Seymour and D. Wood. *Layered wheels*.
- Workshop on even-hole-free graphs, Belgrade, Serbia. Organized by N. Trotignon and K. Vušković. *Truemper configurations*.
- Graph Colouring: from Structure to Algorithms, Dagstuhl, Germany, July 2019. Organized by M. Chudnovsky, D. Paulusma and O. Schaudt. *Layered wheels*.
- A tribute to Frédéric Maffray, Grenoble, France, September 2019. Organized by Nicolas Bousquet, Louis Esperet, Benjamin Lévêque, Alantha Newman, Myriam Preissmann, András Sebő, Matej Stehlik, Zoltán Szigeti and Nicolas Trotignon. *Odd pairs of cliques*.
- New Perspectives in Colouring and Structure, Banff, Canada (Online), March 2020. Organized by Alex Scott, Bojan Mohar and Paul Seymour. *Widths of even-hole-free graphs*.

### Contributed talks

- Journées graphes algorithmes, Dijon, France, April 2003. *A class of perfectly contractile graphs*.
- France–Israel Expert Workshop on Graph Classes and Algorithms, Haifa, Israel, April 2004. *Algorithms for perfectly contractile graphs*.
- GT04, a conference in memory of Claude Berge, Paris, France, July 2004. *Algorithms for perfectly contractile graphs*.
- Journées graphes algorithmes, Grenoble, France, September 2004. *On the structure of self-complementary graphs*.
- ICGT'05, 7th International Colloquium on Graph Theory, Hyères, France, September 2005. *On the structure of self-complementary graphs*.
- Journées graphes algorithmes, Orléans, France, November 2006. *Decomposing Berge graphs and detecting balanced skew partitions*.
- Graphs and Optimization VI, Cademario, Switzerland, August 2007. *Detecting induced subgraphs*.
- Journées graphes algorithmes, Paris, France, November 2007. *Detecting induced subgraphs*.
- Journées graphes algorithmes, Sophia Antipolis, France, November 2008. *A structure theorem for graphs with no cycle with a unique chord and its consequences*.
- 8th French Combinatorial Conference, Orsay, France, June 2010. *2-joins*.
- 7th Slovenian International Conference on Graph Theory (Bled'11), Bled, Slovenia, June 2011. *Detecting a subdivision of a net*.
- 6th workshop on Graph Classes, Optimization, and Width Parameters (GROW), Santorini, Greece. *The stable set problem is FPT in bull-free graphs*, October 2013.
- Meeting in honor of András Sebő, Grenoble, France, April 2014. Organised by N. Brauner, V. Jost, F. Maffray, F. Meunier, M. Preissmann and Z. Szigeti. *Isolating highly connected induced subgraphs*.

- 9th International colloquium on graph theory and combinatorics (ICGT 2014), July 2014, Grenoble, France. *Isolating highly connected induced subgraphs.*

### Seminars

- Journée Combinatoire Rhône-Alpes, Lyon, France, April 2003. *Local properties of large collections of sets.*
- Séminaire de Mathématiques Appliquées, Université de Bordeaux, France, April 2005. *Detection of induced subgraphs.*
- Séminaire de Mathématiques Discrètes et Sciences Sociales, École des Hautes Études en Sciences Sociales, January 2006. *Decomposing Berge graphs*
- Séminaire de Mathématiques et Informatique pour les Réseaux, École Nationale Supérieure des Télécommunications, Paris, April 2006. *Graph coloring using even pairs contraction*
- Séminaire de Combinatoire Algébrique et Géométrie, Université Pierre et Marie Curie, Paris, June 2006. *Decomposing Berge graphs and detecting balanced skew partitions*
- Séminaire du LIAFA, Université Denis Diderot, Paris, February 2007. *Decomposing Berge graphs and detecting balanced skew partitions*
- Séminaire Mathématiques Discrètes, Optimisation et Décision, Université Paris 1 Panthéon-Sorbonne, Paris, November 2007. *Sur les graphes ne possédant pas de cycle avec une seule corde.*
- Séminaire du LRI, Université Paris 11, Orsay, March 2008. *Un théorème de structure pour les graphes ne possédant pas de cycle avec une seule corde.*
- Semaine discrète, Université Grenoble 1, Grenoble, April 2008. *Un théorème de structure pour les graphes ne possédant pas de cycle avec une seule corde.*
- Séminaire Mathématiques Discrètes, Optimisation et Décision, Université Paris 1 Panthéon-Sorbonne, Paris, November 2008. *Le problème 4-dans-un-arbre pour les graphes sans triangles.*
- Seminar, Universidade Federal do Rio de Janeiro, Brasil, November 2008. *Decomposing Berge graphs and detecting balanced skew partitions.*
- Seminar, Universidade Federal do Rio de Janeiro, Brasil, November 2008. *A structure theorem for graphs with no cycle with a unique chord and its consequences.*
- Séminaire AlGco, LIRMM, Université Montpellier 2, December 2008. *Le problème 4-dans-un-arbre pour les graphes sans triangles.*
- Séminaire SIESTE, École Normale Supérieure de Lyon, January 2009. *Décompositions de graphes.*
- Séminaire Maths Discrètes, G-SCOP, Grenoble, September 2009. *Combinatorial optimization with 2-joins.*
- Journées ALADDIN, LABRI, Bordeaux, November 2009. *Excluding induced subgraphs.*



- Séminaire Algorithmique et Combinatoire, LIAFA, Paris, January 2010. *Graphs with no induced subdivision of  $K_4$ .*
- Seminar, University of Oxford, England, February 2010. *Decomposition of classes of graphs defined by excluding induced subgraphs and  $\chi$ -boundedness.*
- One day conference “Graphs structure and algorithms”, Union University, Belgrade, Serbia, June 2010. *Combinatorial optimization with 2-joins.*
- Seminar, Nihon University, Tokyo, Japan, July 2010. *Detecting induced subgraphs.*
- Séminaire Mathématiques Discrètes, Optimisation et Décision, Université Paris 1 Panthéon-Sorbonne, Paris, October 2010. *Quelques cas de la conjecture de Scott.*
- ULB Computer Science Seminars, Université Libre de Bruxelles, Belgium, March 2011. *Small cases of Scott’s conjecture.*
- Séminaire Maths Discrètes, G-SCOP, Grenoble, June 2011. *Excluding subdivisions of the bull.*
- Séminaire Maths Discrètes, G-SCOP, Grenoble, February 2012. *Detecting a net.*
- Séminaire de pôle du LIRMM, Montpellier, June 2013. *Graphes parfaits.*
- Séminaire de la détente mathématique, MMI, Lyon, October 2014. *Décompositions de graphes.*
- Regards croisés, ateliers doctoraux transdisciplinaires, Université de Toulouse, March 2015. *Coloration de graphes.*
- Séminaire de la détente mathématique, MMI, Lyon, February 2016. *Consonance, dissonance et distances.*
- Algebra, Logic and Algorithms seminar, University of Leeds, May 2016. *Recognition,  $\chi$ -boundedness and chords.*
- Séminaire MDOD, Université Paris 1 Panthéon Sorbonne, November 2017. *Graphs classes defined by excluding Truemper Configurations.*
- Séminaire graphes et optimisation, LABRI, Bordeaux, November 2017. *Graphs classes defined by excluding Truemper Configurations.*
- Séminaire général du Laboratoire d’informatique Gaspard-Monge, Marne-la-Vallée, November 2017. *Graphs classes defined by excluding Truemper Configurations.*
- Semaine sport-études, computer science department of ENS de Lyon, Les 7 Laux, January 2018. *Graph Theory.*
- Les rendez-vous d’Ésope : Plaisir des sciences, Rians, September 2019. *Consonance, dissonance et distances.*
- Princeton Discrete Mathematics Seminar (online), March 2020. *Rankwidth, graphs on four vertices, and even holes.*
- Tutte Colloquium, University of Waterloo, June 2020. *Widths in even-hole-free graphs.*
- GT graphes et optimisation, Labri, Bordeaux, November 2020. *Why even-hole-free graphs ?*

## 9 Other

### 1996 – 1997

Military service at Direction Centrale du Service des Essences des Armées, at Vanves, France. Software maintenance, various tasks. . .

### 1994

Training course at INRIA (National Institut for Research in Computer Science and Automatic), Sophia Antipolis, Croap project. Supervisor: Thierry Despeyroux. Syntax of C++ language. Conception of a programming environment for C++, using Centaur System.

### 1992

Training course at the representative office of Crédit Lyonnais Bank in Beijing, China. Data bases.