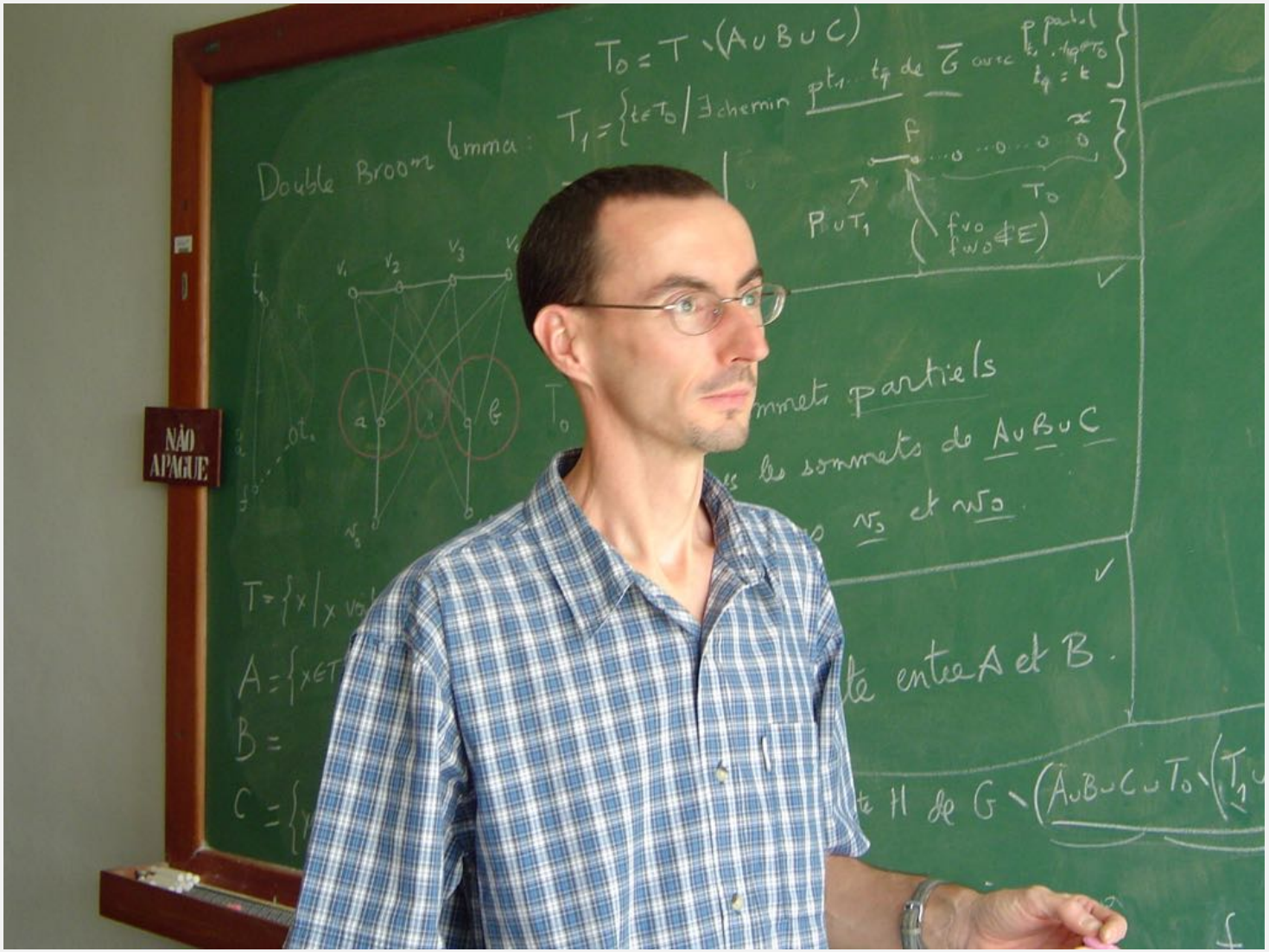
special session in honor of Frédéric Maffray

LAGOS 2019



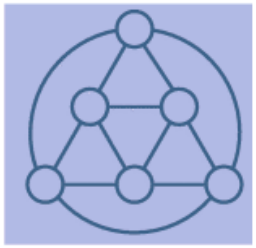
Recollections by Celina Miraglia Herrera de Figueiredo (UFRJ)

The first LAGOS

2001

LAGOS is ten

2001–2019



LAGOS

Latin and American Algorithms, Graphs and Optimization Symposium

LAGOS is the union of two Latin American Conferences: the Brazilian Symposium on Graphs, Algorithms and Combinatorics (GRACO) and the Latin American Conference on Combinatorics, Graphs and Applications (LACGA).

LAGOS 2019 will be held in Belo Horizonte, Brazil. As in previous editions, the conference proceedings will be published in a selected journal, Electronic Notes in Theoretical Computer Science. A special issue of Discrete Applied Mathematics will be devoted to selected full papers after the conference.

The previous editions of LAGOS were held in Fortaleza, Brazil (GRACO 2001), Santiago, Chile (LACGA 2004), Angra dos Reis, Brazil (GRACO 2005), Puerto Varas, Chile (LAGOS 2007), Gramado, Brazil (LAGOS 2009), Bariloche, Argentina (LAGOS 2011), Playa del Carmen, Mexico (LAGOS 2013), Fortaleza, Brazil (LAGOS 2015), and Marseille, France (LAGOS 2017).

site	proceedings	journal
2019	P	J
2017	P	J

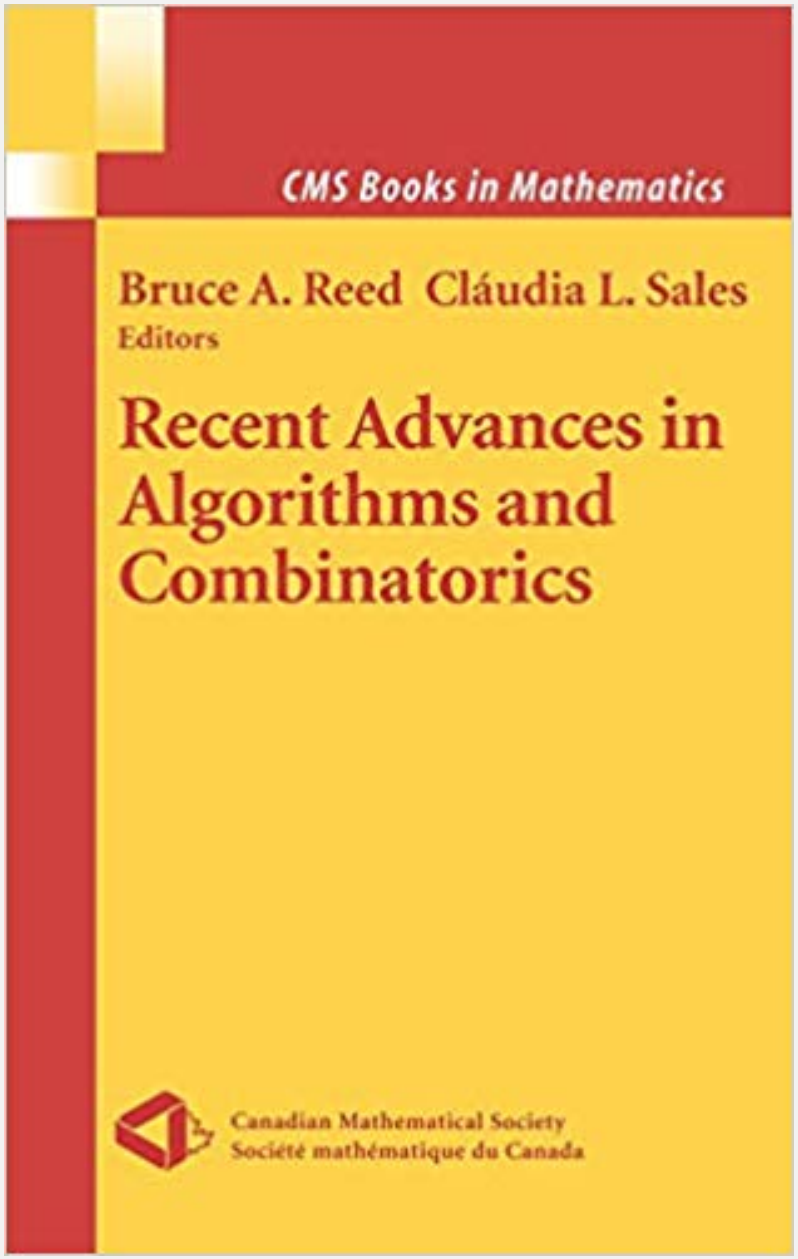
France scientific partner Maffray + Havet 2001–2019

second largest at PC 2019

French continuously strong since 2001

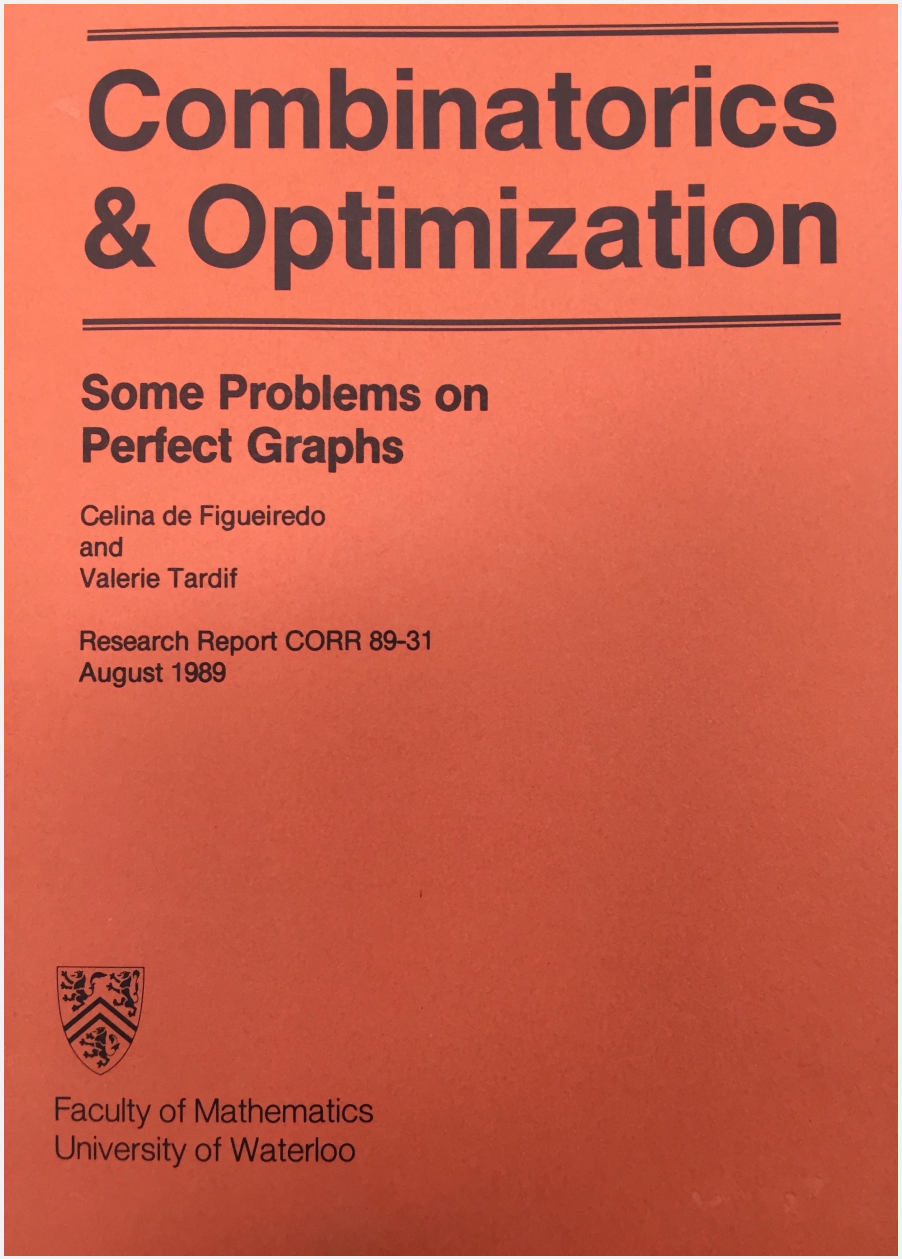
LAGOS 2001 = GRACO + CIMPA School on Algorithms and Combinatorics

CIMPA School on Algorithms and Combinatorics 2001



Thirty years

1989



Frédéric Maffray
PhD, Rutgers, Peter Hammer
Postdoc, Toronto, Derek Corneil

Perfect Graphs School at UFRJ Hertz + Maffray 1991

Dear Celina,

I am sending to you the following:

- The notes of the course on perfect graphs
- The paper on AH-free graphs
- A paper I just finished to write about two classes of graphs G for which $\alpha(G)$ can be computed in polynomial time. Another one, on a third class, will follow later
- a copy of my paper on Tabu Search (with D. de Werra) I think that Carmen was especially interested in this paper

If you need something else, do not hesitate to contact me.

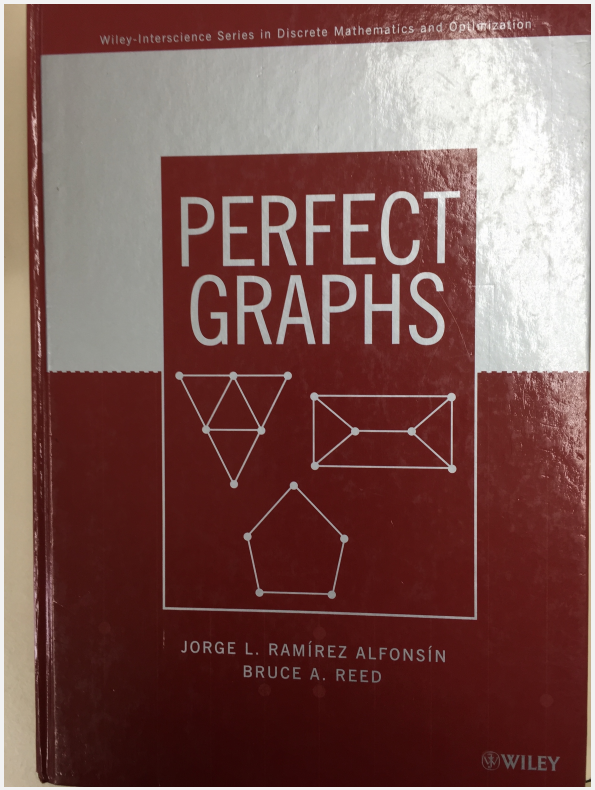
Thanks again for the nice time I could spend in Rio

Ciao,

Alain

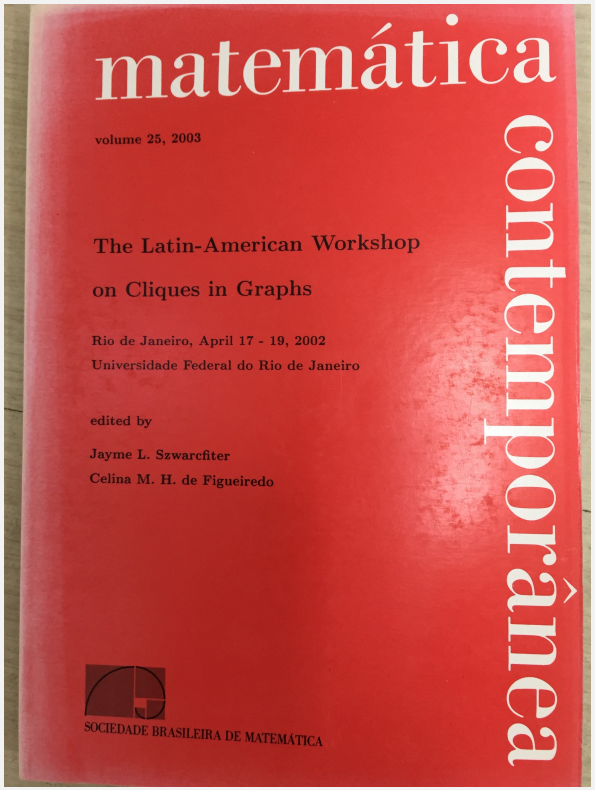
Perfect Graphs in Princeton

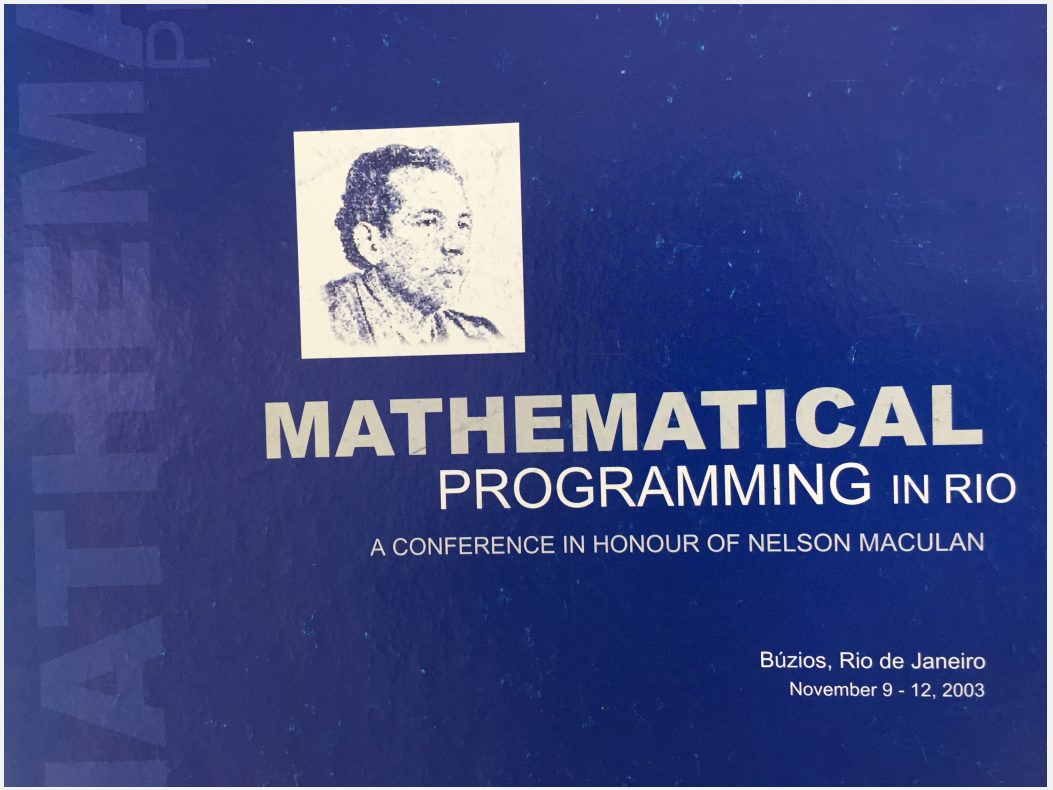
1993



Milestone events: Jayme 60, Maculan 60

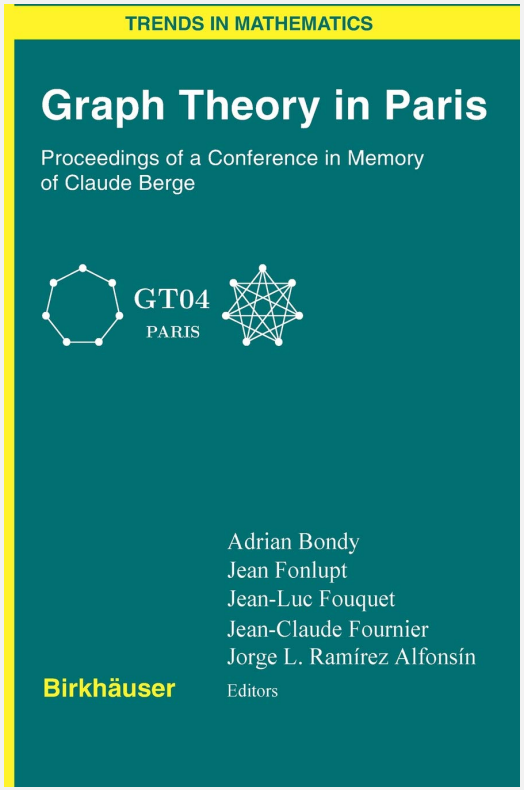
2002, 2003





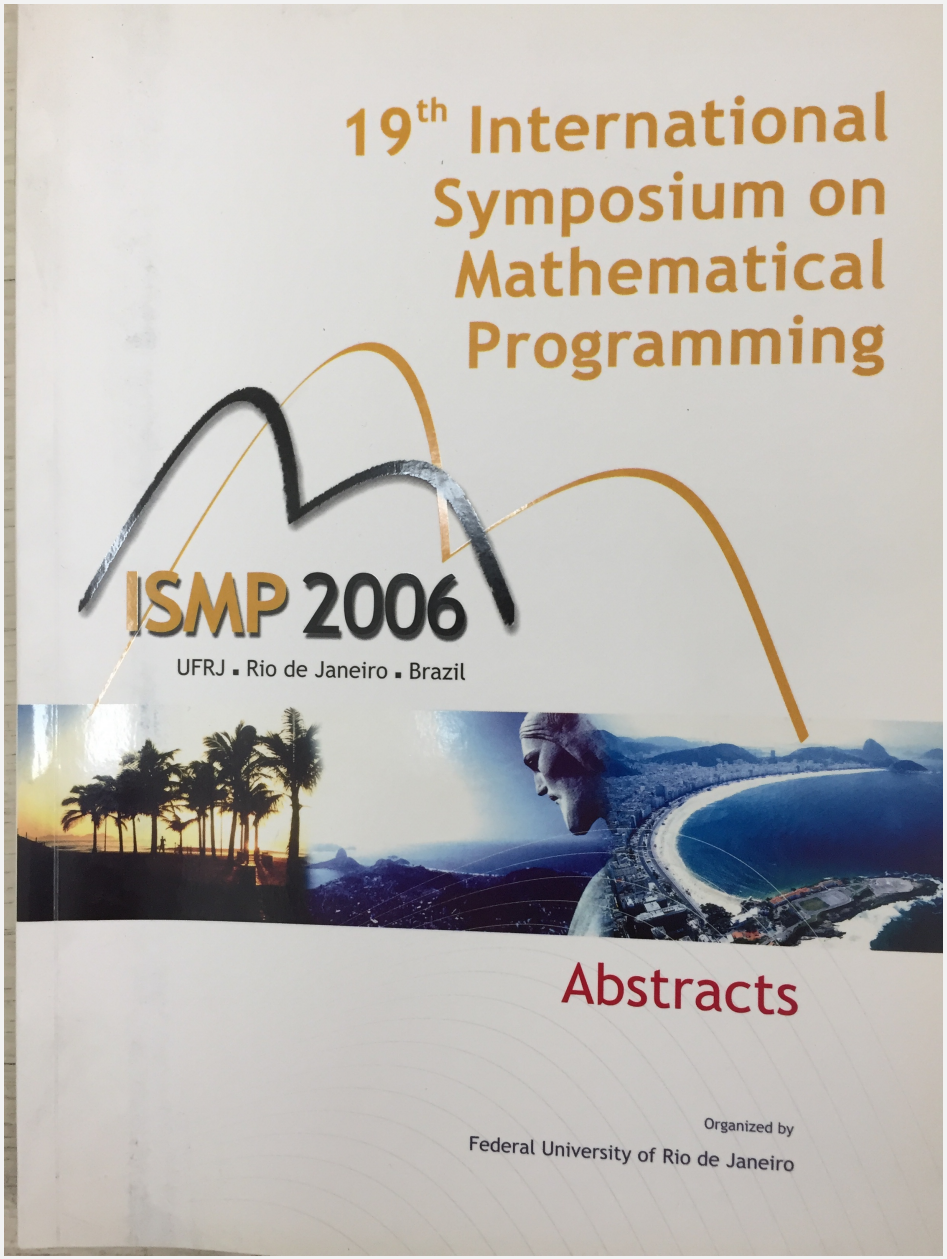
Perfect Graphs in Paris

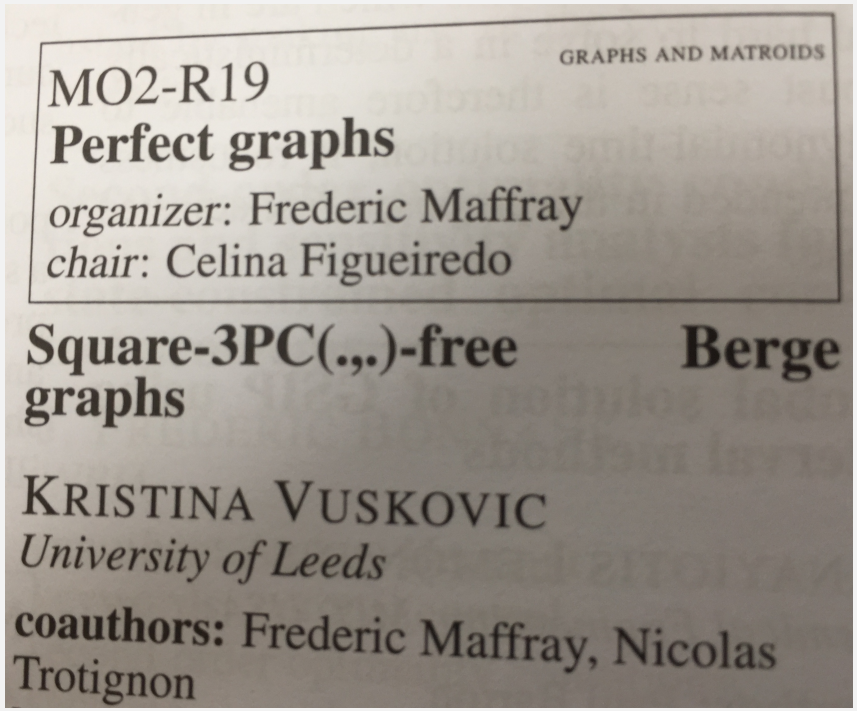
2004



Milestone events: ISMP in Rio

2006





Brazilian co-authors

- F. Maffray, O. Porto, M. Preissmann. A generalization of simplicial elimination orderings. 1996
- H. Everett, C.M.H. de Figueiredo, C. Linhares-Sales, F. Maffray, O. Porto, B. Reed. Path parity and perfection. 1997
- C.M.H. de Figueiredo, F. Maffray, O. Porto. On the structure of bull-free perfect graphs. 1997
- C. Linhares-Sales, F. Maffray, B. Reed. On planar perfectly contractile graphs. 1997
- C. Linhares-Sales, F. Maffray. Even pairs in claw-free perfect graphs. 1998
- C.M.H. de Figueiredo, F. Maffray, O. Porto. On the structure of bull-free perfect graphs, 2: The weakly chordal case. 2001
- C. Linhares Sales, F. Maffray, B.A. Reed. Recognizing planar strict quasi-parity graphs. 2001
- H. Everett, C.M.H. de Figueiredo, C. Linhares Sales, F. Maffray, O. Porto, B.A. Reed. Even pairs. 2001
- C. Linhares Sales, F. Maffray. Even pairs in square-free Berge graphs. 2003
- F. Maffray. On the coloration of perfect graphs. 2003
- S. Dantas, S. Gravier, F. Maffray. Extremal graphs for the list- coloring version of a theorem of Nordhaus and Gaddum. 2004
- C. Linhares Sales, F. Maffray. On dart-free perfectly contractile graphs. 2004
- C.M.H. de Figueiredo, F. Maffray. Optimizing bull-free perfect graphs. 2004
- C.M.H. de Figueiredo, C.T. Hoàng, F. Maffray. A characterization of P4-comparability graphs. 2006
- C.M.H. de Figueiredo, F. Maffray, C.R. Villela Maciel. Even pairs in bull-reducible graphs. 2006
- C. Linhares Sales, F. Maffray, B. Reed. On planar quasi-parity graphs. 2008
- F. Bonomo, G. Durán, F. Maffray, J. Marenco, M. Valencia-Pabon. On the b-coloring of cographs and P4-sparse graphs. 2009
- C.T. Hoàng, C. Linhares Sales, F. Maffray. On minimally b- imperfect graphs. 2009
- C.M.H. de Figueiredo, F. Maffray, C.R. Villela Maciel. Transitive orientations in bull-reducible graphs. 2011
- S. Dantas, C.M.H. de Figueiredo, M.C. Golumbic, S. Klein, F. Maffray. The chain graph sandwich problem. 2011
- F. Maffray, A. Silva. b-colouring outerplanar graphs with large girth. 2012
- V. Campos, A. Gyárfás, F. Havet, C. Linhares Sales, F. Maffray. New bounds on the Grundy number of products of graphs. 2012
- S. Dantas, F. Maffray, A. Silva. 2k2-Partition of some classes of graphs. 2012
- F. Maffray, A. Silva. b-colouring the Cartesian product of trees and some other graphs. 2013
- S. Dantas, C.M.H. de Figueiredo, F. Maffray, R.B. Teixeira. The complexity of forbidden subgraph sandwich problems and the skew partition sandwich problem. 2015

Graphs and Combinatorics (1997) 13: 31–55

Graphs and Combinatorics

On the Structure of Bull-Free Perfect Graphs

Celina M.H. de Figueiredo[1]*, Frédéric Maffray[2] and Oscar Porto[3]

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e-mail: oscar@ele.puc-rio.br

Abstract. A bull is a graph obtained by adding a pendant vertex at two vertices of a triangle. Chvátal and Sbihi showed that the Strong Perfect Graph Conjecture holds for bull-free graphs. We show that bull-free perfect graphs are quasi-parity graphs, and that bull-free perfect graphs with no antihole are perfectly contractile. Our proof yields a polynomial algorithm for coloring bull-free strict quasi-parity graphs

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Theoretical Computer Science 321 (2004) 171–194
Theoretical Computer Science
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On dart-free perfectly contractile graphs☆

Cláudia Linhares Sales[a,*,1], Frédéric Maffray[b]

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Communicated by A. Viola

Abstract

The dart is a graph obtained from a 4-clique by removing one edge and adding a pendant vertex adjacent to one vertex of degree three. An even pair is pair of vertices such that every chordless path between them has even length. A graph is perfectly contractile if every induced subgraph has a sequence of even-pair contractions that leads to a clique. We show that the dart-free graphs satisfy the conjecture of Everett and Reed about the forbidden structures for perfectly contractile graphs. Our proof yields a polynomial-time algorithm to recognize dart-free perfectly contractile graphs.

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Discrete Applied Mathematics 141 (2004) 93–101

DISCRETE APPLIED MATHEMATICS

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Extremal graphs for the list-coloring version of a theorem of Nordhaus and Gaddum☆

Simone Dantas[a], Sylvain Gravier[b], Frédéric Maffray[a]

[a] *Universidade Federal do Rio de Janeiro, COPPE, Brazil*

[b] *CNRS, Laboratoire Leibniz, 46 Avenue Félix Viallet, 38031 Grenoble Cédex, France*

Received 9 July 2001; received in revised form 20 January 2003; accepted 22 March 2003

Abstract

We characterize the graphs G such that $Ch(G) + Ch(\bar{G}) = n + 1$, where $Ch(G)$ is the choice number (list-chromatic number) of G and n is its number of vertices.

Discrete Applied Mathematics 157 (2009) 3519–3530

Contents lists available at ScienceDirect

Discrete Applied Mathematics

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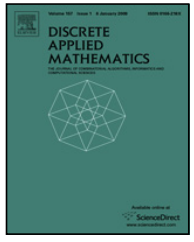

On minimally b-imperfect graphs

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[b] Departamento de Computação, Universidade Federal do Ceará, Campus do Pici, Fortaleza, CE, Brazil

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Keywords:
Coloration
b-coloring
a-chromatic number
b-chromatic number

ABSTRACT

A b-coloring is a coloring of the vertices of a graph such that each color class contains a vertex that has a neighbour in all other color classes. The b-chromatic number of a graph G is the largest integer k such that G admits a b-coloring with k colors. A graph is b-perfect if the b-chromatic number is equal to the chromatic number for every induced subgraph H of G. A graph is minimally b-imperfect if it is not b-perfect and every proper induced subgraph is b-perfect. We give a list $\mathcal{F}$ of minimally b-imperfect graphs, conjecture that a graph is b-perfect if and only if it does not contain a graph from this list as an induced subgraph, and prove this conjecture for diamond-free graphs, and graphs with chromatic number at most three.

Discrete Applied Mathematics 182 (2015) 15–24

Contents lists available at ScienceDirect

Discrete Applied Mathematics

journal homepage: www.elsevier.com/locate/dam

The complexity of forbidden subgraph sandwich problems and the skew partition sandwich problem☆

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[b] COPPE, Universidade Federal do Rio de Janeiro, Brazil
[c] CNRS, Laboratoire G-SCOP, INPG, Université Joseph Fourier, Grenoble, France
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Graph sandwich problem
Forbidden subgraph
Perfect graphs

ABSTRACT

The Π graph sandwich problem asks, for a pair of graphs $G_1 = (V, E_1)$ and $G_2 = (V, E_2)$ with $E_1 \subseteq E_2$, whether there exists a graph $G = (V, E)$ that satisfies property Π and $E_1 \subseteq E \subseteq E_2$. We consider the property of being F-free, where F is a fixed graph. We show that the claw-free graph sandwich and the bull-free graph sandwich problems are both NP-complete, but the paw-free graph sandwich problem is polynomial. This completes the study of all cases where F has at most four vertices. A skew partition of a graph G is a partition of its vertex set into four nonempty parts A, B, C, D such that each vertex of A is adjacent to each vertex of B, and each vertex of C is nonadjacent to each vertex of D. We prove that the skew partition sandwich problem is NP-complete, establishing a computational complexity non-monotonicity.

Workshop Internacional de Combinatória 1996

special session in honor of Frédéric Maffray

LAGOS 2019

Recollections by Celina Miraglia Herrera de Figueiredo (UFRJ)