

## Preface

Research in Graph Theory and Algorithms on Graphs has been increasing in the last decade. In particular, the study of problems related to cliques in graphs has been one of the most trending topics.

This volume contains some of the works presented in the 7th Latin-American Workshop on Cliques in Graphs, which was held in La Plata, Buenos Aires, Argentina, November 8-11, 2016.

The Latin American Workshop on Cliques in Graphs is becoming a traditional workshop on Graph Theory. Previous workshops have been organized in each of the following countries: Brazil (2002), Argentina (2006), Mexico (2008), Brazil (2010), Argentina (2012), and Brazil (2014). In its origins, the workshop was meant to foster interaction between the Latin-American graph theory and combinatorics researchers, whose interests include cliques, clique graphs, the behaviour of the clique operator, and related issues. In these fourteen years the community has grown and the workshop has become not only a place for exchanging ideas on cliques, but a moment to strengthen the relationships between its community members as well as to start new relations.

Besides Latin America, in this edition there were special invited speakers from France and Slovenia. There were 6 plenary conferences, 54 contributed talks and the presence of about 90 researchers and students. Some of these works gave rise to papers that have been included in this volume.

We want to thank the Steering Committee for trusting us the organization of this edition of the workshop, the Program Committee for their help in organizing the sessions, the invited speakers for their enthusiastic participation, and all the authors for their contributions.

We are really grateful to the members of the Steering and Program Committees and especially to the members of the Organizing Committee, who have worked hard in carrying out the many tasks necessary for successfully holding this meeting. We thank the financial support given by Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET-Argentina), Universidad Nacional de La Plata (UNLP), Universidad Autónoma Metropolitana of Mexico (UAM) and Consejo Nacional de Ciencia y Tecnología (CONACyT-Mexico) which, through our esteemed colleague Miguel Pizaña, contributed significantly, and the Brazilian Agencies Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do Rio de Janeiro (FAPERJ). Thanks are also due to the referees for their prompt and thorough work.

Finally, we would like to thank the Editor-in-Chief of *Matemática Contemporânea*, for opening this important forum to the participants of the Latin-American Workshop.

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Marisa Gutierrez,  
Celina M. H. de Figueiredo,  
Márcia R. Cappelle.

## Invited Speakers

- Structural results on circle graphs: a survey and the main open problems.

**Guilherme Durán**

Universidad de Buenos Aires, Argentina

Universidad de Chile, Chile

- On the structure of maximal cliques for cocomparability graphs.

**Michel Habib**

IRIF, CNRS & University Paris Diderot, France

- On the dichromatic number of planar (di)graphs

**Bernardo Llano**

Universidad Autónoma Metropolitana - Iztapalapa, Mexico

- Cliques and graph classes.

**Martin Milanič**

University of Primorska, Slovenia

- AND/OR-Convexity: A graph convexity based on processes and deadlock models.

**Fábio Protti**

Fluminense Federal University, Brazil

- On monochromatic partitions.

**Maya Stein**

Universidad de Chile, Chile

## Contributed Talks

- Characterization by forbidden induced subgraphs of some subclasses of chordal graphs.

S. Nogueira, V. dos Santos.

- Characterization of the CPT posets in the k-tree class.

L. Alcón, N. Gudiño, M. Gutierrez.

- The strict terminal connection problem with a bounded number of routers.

A. Melo, C. de Figueiredo, U. Souza.

- A watermarking scheme for structured programs.

L. Bento, D. Boccardo, R. Machado, V. P. de Sá, J. Szwarcfiter.

- On the  $P_3$ -Hull Number of the Cartesian Product of Graphs.

E. M. M. Coelho, H. Coelho, J. Nascimento, J. Szwarcfiter.

- On Convex Partitions of Graphs in the Triangle-Path Convexity.

M. Collares, G. Miranda, V. dos Santos, E. Wanner.

- Convex  $p$ -partitions and convex  $p$ -covers.

L. González, L. Grippo, M. Safe, V. dos Santos.

- On the  $b$ -continuity of the lexicographic product of graphs.

C. Linhares Sales, L. Sampaio, A. Silva.

- Parameterized complexity in list coloring problems.  
R. de Freitas, S. Gama, U. Souza.
- A linear algorithm for the  $k$ -tuple chromatic number of partner limited graphs.  
F. Bonomo, I. Koch, M. Valencia-Pabon.
- Integralidad de los modelos arco-circulares unitarios que son minimales.  
F. Soullignac, P. Terlisky.
- Characterization and linear-time detection of the minimal obstructions to concave-round graphs and the circular-ones property.  
M. Safe.
- About some special classes of well-covered graphs.  
S. R. Alves, L. Faria, S. Klein.
- Clique Corona Graphs - A Short Survey.  
V. Levit, E. Mandrescu.
- The Short Block-Move CLOSEST PERMUTATION PROBLEM is NP-Complete.  
L. Cunha, V. dos Santos, L. Kowada, C. de Figueiredo.
- On the problem of finding all minimum spanning trees.  
J. Martinez, R. de Freitas, A. da Silva.
- Sandwich Problems and Structural Properties of the Two Forbidden Four-vertex Subgraphs Classes.  
J. Alvarado, S. Dantas.
- 1-identifying codes on caterpillar graphs.  
J. Félix, M. Cappelle.
- Error Correcting Codes and Cliques of Graphs.  
N. Pedroza, P. Pinto, J. Szwarcfiter.
- Algorithms for Deadlock Resolution in Subcubic Graphs.  
A. Carneiro, F. Protti, U. Souza.
- Optimal Edge Fault-Tolerant Embedding of a Star over a Cycle.  
T. Akagi, E. Canale, C. Risso.
- Biclique Graphs of a Subclass of Split Graphs.  
M. Groshaus, A. Guedes, J. Puppò.
- Sobre el comportamiento del operador diclique.  
M. Gutierrez, B. Llano, S. Tondato.
- Worst Case Instances for Maximum Clique Algorithms and How to Avoid Them.  
A. P. Züge, R. Carmo.
- Using PMaxSat Techniques to Solve the Maximum Clique Problem.  
A. P. Züge, R. Carmo, R. T. de Oliveira, F. Silva.
- Locating-dominating partitions in graphs.  
I. Pelayo, C. Hernando, M. Mora.

- Total dominating sequences in trees, split graphs, and under modular decomposition.  
B. Brešar, T. Kos, G. Nasini, P. Torres.
- On the complexity of  $k$ -tuple total and total  $\{k\}$ -domination in graphs.  
G. Argirollo, V. Leoni, P. Torres.
- Edge Coloring in Split-Comparability Graphs.  
J. de Sousa Cruz, C. N. da Silva, S. M. de Almeida.
- On Maximum Colored Cuts in Edge Colored Graphs.  
R. Scupira, I. Sau, L. Faria, S. Klein, U. Souza.
- Total Coloring and AVD Total Coloring in Complete Tripartite Graphs.  
I. R. Tiburcio, S. M. de Almeida.
- Caracterización espectral de la composición de ciertos grafos que poseen subgrafos inducidos completos por niveles.  
L. Medina.
- Critical Ideals of Digraphs.  
C. Alfaro, C. Valencia, A. Vazquez-Ávila.
- $\mathcal{D}^{\mathcal{L}}$ -integral and  $\mathcal{D}^{\mathcal{Q}}$ -integral graphs.  
C. M. da Silva Jr., M. A. A. de Freitas, R. Del-Vecchio.
- On graphs with linear convergence.  
F. Bonomo, M. Frías Armenta, L. Taravilse.
- On Strong Graph Bundles and Clique Graphs.  
F. Larrión, M. Pizaña, R. Villarroel-Flores.
- $K_4$ -free clique graphs with unique critical generator and  $K_5$ -free clique graphs with each triangle contained in at most one  $K_4$  with unique critical generator.  
G. Ravenna, L. Alcón.
- Equitable total coloring of Loupekine Snarks and its products.  
L. Cordeiro, S. Dantas, D. Sasaki.
- Equitable total coloring of complete  $r$ -partite graphs.  
A. G. da Silva, S. Dantas, D. Sasaki.
- On the parameterized complexity of finding all the cliques of a graph.  
M. Pizaña, I. Robles, L. Taravilse.
- On the clique behavior's undecidability for finitely presented graphs.  
C. Cedillo, M. Pizaña.
- On unit  $d$ -interval graphs.  
G. Durán, F. F. Slezak, L. Grippo, F. de S. Oliveira, J. Szwarcfiter.
- Characterizing probe unit interval graphs within the class of interval graphs.  
L. Grippo.
- A structural characterization of minimal completions from interval graphs to proper interval graphs.  
N. Pardal, M. Valencia-Pabon, G. Durán.

- Sobre Grafos ORTH[3,2,3].  
C. Bornstein, J. W. Pinto, J. Szwarcfiter.
- Bounds on the number of tessellations in graphs.  
A. Abreu, L. Cunha, L. Kowada, F. Marquezino.
- (3, 4, 6)-Fullerene Graphs, Combinatorial Curvature Concept, Bipartite Edge Frustration and Maximum Independent Set.  
D. Nicodemos, S. Klein, L. Faria.
- The Petersen Graph Synchronizes.  
E. Canale.
- On fractional graph and hypergraph isomorphism and its applications.  
D. Tilli, F. Bonomo.
- On the geodesic Carathéodory number for the cartesian product of graphs.  
E. Lira, D. Castonguay, E. M. M. Coelho, H. Coelho.
- Sobre o número de Helly na convexidade  $P_3$ .  
M. T. Carvalho Junior, M. C. Dourado, J. Szwarcfiter.
- Convexidade de Precessão em Digrafos.  
A. Pereira, C. Centeno.
- Vertex intersection graphs of paths on a grid: a characterization within block graphs.  
L. Alcón, F. Bonomo, M. P. Mazzoleni.
- Maximal Independent Sets in Simple Graphs.  
C. Ortiz, M. Villanueva.