Publications and Preprints

Maria Chudnovsky

Journal papers published

1. Sparse induced subgraphs in P_6-free graphs. (*with* Rose McCarty, Marcin Pilipczuk, Mihal Pilipczuk and Pawel Rzazewski) *ACM Transactions on Algorithms, 22 (2026) 1–45.*
2. Induced subgraphs and tree-decompositions XVI. Complete bipartite induced minors. (*with* Sepehr Hajebi and Sophie Spirkl), *Journal of Combinatorial Theory, Ser. B, 176 (2026), 287–318.*
3. Tree independence number II. 3PC-free graphs. (*with* Sepehr Hajebi, Daniel Lokshtanov and Sophie Spirkl), *Journal of Combinatorial Theory, Ser. B, 176 (2026), 74–96.*
4. Reuniting χ-boundedness with polynomial χ-boundedness, (*with* Linda Cook, James Davies and Sang-il Oum), *Journal of Combinatorial Theory, Ser. B, 176 (2026), 30–73.*
5. On treewidth and maximum cliques. (*with* Nicolas Trotignon), *Innovations in Graph Theory, 2 (2025), pp. 223–243.*
6. Unavoidable induced subgraphs in graphs with complete bipartite induced minors. (*with* M. Hatzel, T. Korhonen, N. Trotignon, and S. Wiederrech), *SIAM Journal on Discrete Math, 39 (2025), 2049–2066.*
7. Counting independent sets in structured graphs. (*with* Matija Bucić and Julien Codsi) *Combinatorics Probability and Computing, 34 (2025), 625–634*
8. Induced subgraphs and tree-decompositions IX. Grid theorem for perforated graphs (*with* Bogdan Alecu, Sepehr Hajebi and Sophie Spirkl), *Advances in Combinatorics, (2025).*
9. Induced subgraphs and tree-decompositions XII. Grid theorem for pinched graphs (*with* Bogdan Alecu, Sepehr Hajebi and Sophie Spirkl), *Innovations in Graph Theory,* **2** *(2025), 1–23.*
10. Induced subgraphs and tree-decompositions XIII. Basic obstructions in $\mathcal{H}$-free graphs for finite $\mathcal{H}$. (*with* Bogdan Alecu, Sepehr Hajebi and Sophie Spirkl), *Advances in Combinatorics (2025).*
11. Even pairs in graphs with no balanced skew-partitions, (*with* Tara Abrishami and Yaqian Tang) *Discrete Mathematics, 348 (2025), 114388.*
12. Induced subgraphs and tree-decompositions XIV. Non-adjacent neighbors in a hole. (*with* Sepehr Hajebi and Sophie Spirkl), *European Journal of Combinatorics, 124 (2025), 104074.*

13. Submodular functions and perfect graphs, (*with* Tara Abrishami, Cemil Dibek and Kristina Vuskovic), *Mathematics of Operations Research, 50 (2025), 189–208.*

14. On prime Cayley graphs, (*with* M. Cizek, L. Crew, J. Minac, T.T. Nguyen, S. Spirkl, and N. D. Tan) *Journal of Combinatorics, (2024)*

15. The structure of metrizable graphs, (*with* Danile Cizma and Nati Linial), *Discrete And Computational Geometry, 73 (2024), 73–92.*

16. Induced subgraphs and tree-decompositions VIII. Excluding a forest in (prism,theta)-free graphs. (*with* Tara Abrishami, Bogdan Alecu, Sepehr Hajebi, and Sophie Spirkl), *Combinatorica, 44 (2024), 921–948.*

17. List-k-coloring H-free graphs for all $k > 4$, (*with* Sepehr Hajebi and Sophie Spirkl), *Combinatorica, 44 (2024), 1063–1068.*

18. Quasi-polynomial time approximation schemes for the Maximum Weight Independent Set Problem in H-free graphs, (*with* Marcin Pillipczuk, Mihal Pillipczuk and Stephan Thomasse), *SIAM Journal on Computing, 53 (2024), 47–86.*

19. Induced subgraphs and tree-decompositions VI. Graphs with 2-cutsets. (*with* Tara Abrishami, Sepehr Hajebi, and Sophie Spirkl) *Discrete Math, 348 (2025), 114195*

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33. Attempting perfect hypergraphs, (*with* Gil Kalai) *Israel J. of Math, 256 (2023), 133-151.*

34. Polynomial bounds for chromatic number. VII. Disjoint holes (*with* Alex Scott, Paul Seymour and Sophie Sprikl) *Journal of Graph Theory, 104 (2023), 499-515.*

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36. Pure Pairs X. Excluding six-vertex tournaments, (*with* Alex Scott, Paul Seymour and Sophie Spirkl), *European Journal of Combinatorics, 115 (2024), 103786*

37. Induced subgraphs and tree-decompositions IV. (Even hole, diamond, pyramid)-free graphs (*with* Tara Abrishami, Sepehr Hajebi, and Sophie Spirkl), *Electronic Journal of Combinatorics, 30 (2023), P2.42*

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2. String Graph Obstacles of High Girth and of Bounded Degree. (*with* David Eppstein and David Fischer), *Proc. 33rd International Symposium on Graph Drawing and Network Visualization (GD 2025), 2025*

3. Tree independence number IV. Even-hole-free graphs. (*with* Peter Gartland, Sepehr Hajebi, Daniel Lokshtanov and Sophie Spirkl), *Proc. SODA'25, 2025*

4. Sparse induced subgraphs in P_6-free graphs. (*with* Rose McCarty, Marcin Pilipczuk, Mihal Pilipczuk and Pawel Rzazewski) *Proc. SODA'24, 2024*

5. Max weight independent set in sparse graphs with no long claws (*with* Tara Abrishami, Marcin Pilipczuk and Pawel Rzazewski), *Leibniz International Proceedings in Informatics (STAC2024).*

6. Polynomial-time algorithm for maximum independent set in graphs with no long induced claws (*with* Tara Abrishami, Cemil Dibek and Pawel Rzazewski), *Proc. SODA'22, 2022*

7. Induced subgraphs of bounded treewidth and the container method, (*with* T. Abrishami, M. Pilipczuk, P. Rzazewski and P. Seymour), *Proc. SODA'21, 2021*

8. Finding large H-colorable subgraphs in hereditary graph classes, (*with* J. King, Mihal Pilipczuk, P. Rzazewski and S. Spirkl), *28th Annual European Symposium on Algorithms, 2020*

9. Quasi-polynomial time approximation schemes for the Maximum Weight Independent Set Problem in H-free graphs, (*with* Marcin Pillipczuk, Mihal Pillipczuk and Stephan Thomasse), *Proc. SODA'20, 2020*

10. Complexity of C_k-coloring in hereditary classes of graphs, (*with* S. Huang, P. Rzazewski, S. Spirkl, M. Zhong), *27th Annual European Symposium on Algorithms, 2019*

11. Avoidable vertices and edges in graphs, (*with* J. Beisegel, V. Gurvich, M. Milanic and M. Servatius), *Proc. 16th Algorithms and Data Structures Symposium (WADS 2019) Lecture Notes in Computer Science 11646 (2019) 126-139*

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13. Analyzing the Performance of Greedy Maximal Scheduling via Local Pooling and Graph Theory, (*with* Berk Birand, Bernard. Ries, Paul Seymour, Gil Zussman and Yori Zwols) Proc. IEEE INFOCOM'10, 2010.

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Papers to appear

1. Induced subgraphs and tree-decompositions XV. Even-hole-free graphs with bounded clique number have logarithmic treewidth. (*with* Peter Gartland, Sepehr Hajebi, Daniel Lokshtanov and Sophie Spirkl), *to appear in Transactions of AMS*

2. Tree independence number III. Thetas, prisms and stars. (*with* Sepehr Hajebi and Nicolas Trotignon), *to appear in Journal of Graph Theory*

3. The vertex sets of subtrees of a tree, (*with* Tung Nguyen, Alex Scott and Paul Seymour), *to appear in Electronic Journal of Combinatorics*

4. Induced subgraphs and tree-decompositions XIX. Thetas and Forests. (*with* Julien Codsi, Sepehr Hajebi and Sophie Spirkl), *to appear in SIAM Journal on Discrete Math*

Papers submitted for publication

1. Tree-independence number of P_6-free graphs excluding a $K_{2,t}$, (*with* Julien Codsi, Martin Milanič and Varun Sivashankar), *submitted for publication*

2. Minors of plane digraphs (*with* Paul Seymour), *submitted for publication*

3. Induced cycles of many lengths, (*with* Ilya Maier), *submitted for publication*

4. Tree-independence number VII. Excluding a star, (*with* Jadwiga Czyzewska, Marcin Pilupczuk and Pawel Rzazewski), *submitted for publication*

5. Localized Erdős-Pósa property for subdivisions, (*with* Icey Siyi Ai and Julien Codsi), *submitted for publication*

6. Balanced separators in wheel-induced-minor-free graphs, (*with* J. Pascal Gollin, Matjaž Krnc and Martin Milanič), *submitted for publication*

7. Induced minors and subpolynomial treewidth, (*with* Julien Codsi, David Fischer and Daniel Lokshtanov), *submitted for publication*

8. Tree independence number VI. Excluding a theta and a pyramid, (*with* Julien Codsi), *submitted or publication*

9. A Simple Layered-wheel-like construction, (*with* David Fischer, Sepehr Hajebi, Sophie Spirkl and Batrosz Walczak), *submitted for publication*

10. (Treewidth, clique)-boundedness and poly-logarithmic tree-independence, (*with* Daniel Lokshtanov and Ajay Satheeshkumar), *submitted for publication*

11. Coarse Balanced Separators and Tree-Decompositions, (*with* Robert Hickingbotham), *submitted for publication*

12. Tree independence number V. Claws and walls. (*with* Julien Codsi, Daniel Lokshtanov, Martin Milanič and Varun Sivashankar), *submitted for publication*

13. Strictly metrizable graphs are minor closed. (*with* Daniel Cizma and Nati Linial), *submitted for publication*

14. Colouring t-perfect graphs (*with* Linda Cook, James Davies, Sang-il Oum and Jane Tan) *submitted for publication*

15. Induced subgraphs and tree-decompositions XVIII. Obstructions to bounded pathwidth. (*with* Sepehr Hajebi and Sophie Spirkl), *submitted for publication*

16. Induced subgraphs and tree-decompositions XVII. Anticomplete sets of large treewidth. (*with* Sepehr Hajebi and Sophie Spirkl), *submitted for publication*

17. Tree independence number IV. Even-hole-free graphs. (*with* Peter Gartland, Sepehr Hajebi, Daniel Lokshtanov and Sophie Spirkl), *submitted for publication*

18. Max Weight Independent Set in sparse graphs with no long claws, (*with* T. Abrishami, C. Dibek, M. Pilipczuk and P. Rzazewski) *submitted for publication*

19. Induced subgraphs and tree-decompositions XI. Local structure in even-hole-free graphs of large treewidth. (*with* Bogdan Alecu, Sepehr Hajebi and Sophie Spirkl), *submitted for publication*

20. Induced subgraphs and tree-decompositions X. Towards logarithmic treewidth in even hole free graphs. (*with* Tara Abrishami, Bogdan Alecu, Sepehr Hajebi, and Sophie Spirkl), *submitted for publication*

Manuscripts not yet submitted and papers in preparation

1. From coarse separators to coarse tree decompositions, (*with* Julien Codsi and Claire Kaneshiro), *in preparation*
2. On induced minors and the grid theorem, (*with* Ilya Maier and Nicolas Trotignon), *in preparation*
3. Excluding paths and bicliques, (*with* Julien Codsi, Matjaz Krnc and Martin Milanic), *in preparation*
4. Induced minors and coarse tree decompositions, (*with* Julien Codsi, Daniel Lokshtanov and Ajay Satheeshkumar), *manusript*
5. Bandwidth and subtrees. (*with* Daniel Lokshtanov and Eran Nevo), *in preparation*
6. Maximum independent sets in (pyramid, even hole)-free graphs, (*with* Stephan Thomasse, Nicolas Trotignon and Kristina Vuskovic), *manuscript*
7. Small families under subdivision, (*with* M. Loebl and P. Seymour), *manuscript*
8. Optimal anti-thikenings of claw-free graphs (*with* Andrew King), *manuscript*
9. On the Erdös-Lovász Tihany Conjecture in claw-free graphs, (*with* Alexandra Fradkin and Matthieu Plumettaz), *manuscript*