

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 Lokshтанov 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 Codsì) *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
20. Graphs with no even holes and no sector wheels are the union of two chordal graphs (*with* Tara Abrishami, Eli Berger and Shira Zerbib), *European Journal of Combinatorics*, 122 (2024), 104035.
21. Induced subgraphs of bounded treewidth and the container method, (*with* T. Abrishami, M. Pilipczuk, P. Rzaczewski and P. Seymour), *SIAM Journal on Computing*, 53 (2024), 10.1137/20M1383732.
22. Tree independence number I. (Even hole, diamond, pyramid)-free graphs. (*with* Tara Abrishami, Bogdan Alecu, Sepehr Hajebi, Sophie Spirkl and Kristina Vuskovic), *Journal of Graph Theory*, 106 (2024), 924–943.
23. Cops and robbers in P_5 -free graphs. (*with* Sergey Norin, Paul Seymour and Jeremie Turcotte), *SIDMA*, 38 (2024), 845–856.
24. Four-coloring P_6 -free graphs I. Extending an excellent precoloring. (*with* S. Spirkl and M. Zhong), *SIAM Journal on Computing*, 53 (2024), 111–145
25. Four-coloring P_6 -free graphs II. Finding an excellent precoloring. (*with* S. Spirkl and M. Zhong), *SIAM Journal on Computing*, 53 (2024), 146–187

26. Induced subgraphs and tree-decompositions V. At most one neighbor in a hole. (*with* Tara Abrishami, Bogdan Alecu, Sepehr Hajebi, Sophie Spirkl and Kristina Vuskovic), *Journal of Graph Theory*, 105 (2024), 542-561.
27. Induced subgraphs and tree-decompositions VII. Basic obstructions in H -free graphs (*with* Tara Abrishami, Bogdan Alecu, Sepehr Hajebi, and Sophie Spirkl), *Journal of Combinatorial Theory, Series B*, 164 (2024), 443-472.
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30. Bipartite graphs with no K_6 -minor, (*with* A. Scott, P. Seymour and S.Spirkl), *Journal of Combinatorial Theory, Series B*, 164 (2024), 68-104.
31. Non-uniform degrees and rainbow versions of the Caccetta-Haggkvist conjecture, *with* Ron Aharoni, Eli Berger, He Guo and Shira Zerbib, *SIDMA*, 37 (2023), 1704 - 1714.
32. Complexity of C_k -coloring in hereditary classes of graphs, (*with* S. Huang, P. Rzaczewski, S.Spirkl and M. Zhong), *Information and Computation*, 292 (2023), *Article 105015*.
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 Spirkl) *Journal of Graph Theory*, 104 (2023), 499-515.
35. Strengthening Rodl's theorem, (*with* Alex Scott, Paul Seymour and Sophie Spirkl), *Journal of Combinatorial Theory, Series B*, 163 (2023), 256-271.
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
38. Proof of a conjecture of Plummer and Zha, (*with* Paul Seymour) *J. Graph Theory*, 103 (2023), 437-450

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45. Forbidden induced pairs for perfectness and w -colorability of graphs, (*with* A. Kabela, B. Li and P. Vrana), *Electronic J. Combinatorics*, 29 (2022), P2.21
46. Rainbow paths and large rainbow matchings, (*with* R. Aharoni, E. Berger and S. Zerbib), *Electronic J. Combinatorics*, 29(2022), P1.10
47. Induced subgraphs and tree-decompositions I. Even-hole-free graphs of bounded degree, (*with* T. Abrishami and K. Vuskovic), *JCT B*, 157 (2022), 144-175.
48. Tournaments and the Strong Erdős-Hajnal property, (*with* E. Berger, K. Choromanski and S. Zerbib), *European Journal of Combinatorics*, 100 (2022), 103440
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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
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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 Codsí, Sepehr Hajebi and Sophie Spirkl), *to appear in SIAM Journal on Discrete Math*

Papers submitted for publication

1. Induced minors and coarse tree decompositions, (*with* Julien Codsí, Daniel Lokshtanov and Ajay Satheeshkumar), *submitted for publication*
2. Tree-independence number of P_6 -free graphs excluding a $K_{2,t}$, (*with* Julien Codsí, Martin Milanič and Varun Sivashankar), *submitted for publication*
3. Minors of plane digraphs (*with* Paul Seymour), *submitted for publication*
4. Induced cycles of many lengths, (*with* Ilya Maier), *submitted for publication*
5. Tree-independence number VII. Excluding a star, (*with* Jadwiga Czyzewska, Marcin Pilupczuk and Pawel Rzazewski), *submitted for publication*
6. Localized Erdős-Pósa property for subdivisions, (*with* Icey Siyi Ai and Julien Codsí), *submitted for publication*

7. Balanced separators in wheel-induced-minor-free graphs, (*with* J. Pascal Gollin, Matjaž Krnc and Martin Milanič), *submitted for publication*
8. Induced minors and subpolynomial treewidth, (*with* Julien Codsì, David Fischer and Daniel Lokshtanov), *submitted for publication*
9. Tree independence number VI. Excluding a theta and a pyramid, (*with* Julien Codsì), *submitted or publication*
10. A Simple Layered-wheel-like construction, (*with* David Fischer, Sepehr Hajebi, Sophie Spirkl and Batrosz Walczak), *submitted for publication*
11. (Treewidth, clique)-boundedness and poly-logarithmic tree-independence, (*with* Daniel Lokshtanov and Ajay Satheeshkumar), *submitted for publication*
12. Coarse Balanced Separators and Tree-Decompositions, (*with* Robert Hickingbotham), *submitted for publication*
13. Tree independence number V. Claws and walls. (*with* Julien Codsì, Daniel Lokshtanov, Martin Milanič and Varun Sivashankar), *submitted for publication*
14. Strictly metrizable graphs are minor closed. (*with* Daniel Cizma and Nati Linial), *submitted for publication*
15. Colouring t-perfect graphs (*with* Linda Cook, James Davies, Sang-il Oum and Jane Tan) *submitted for publication*
16. Induced subgraphs and tree-decompositions XVIII. Obstructions to bounded path-width. (*with* Sepehr Hajebi and Sophie Spirkl), *submitted for publication*
17. Induced subgraphs and tree-decompositions XVII. Anticomplete sets of large treewidth. (*with* Sepehr Hajebi and Sophie Spirkl), *submitted for publication*
18. Tree independence number IV. Even-hole-free graphs. (*with* Peter Gartland, Sepehr Hajebi, Daniel Lokshtanov and Sophie Spirkl), *submitted for publication*
19. Max Weight Independent Set in sparse graphs with no long claws, (*with* T. Abrishami, C. Dibek, M. Pilipczuk and P. Rzazewski) *submitted for publication*
20. 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*
21. 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. Subpolynomial tree-independence (*with* Julien Codsì, Daniel Lokshtanov and Ajay Satheeshkumar), in preparation
2. Erdős-Pósa for anticomplete planar minors (*with* Amadeus Reinald and Stephan Thomassé), *in preparation*
3. Excluding a fan minor (*with* Paul Seymour and Liana Yepremyan), *in preparation*
4. From coarse separators to coarse tree decompositions, (*with* Julien Codsì and Claire Kaneshiro), *in preparation*
5. On induced minors and the grid theorem, (*with* Ilya Maier and Nicolas Trotignon), *in preparation*
6. Excluding paths and bicliques, (*with* Julien Codsì, Matjaz Krnc and Martin Milanic), *in preparation*
7. Bandwidth and subtrees. (*with* Daniel Lokshtanov and Eran Nevo), *in preparation*
8. Maximum independent sets in (pyramid, even hole)-free graphs, (*with* Stephan Thomasse, Nicolas Trotignon and Kristina Vuskovic), *manuscript*
9. Small families under subdivision, (*with* M. Loebì and P. Seymour), *manuscript*
10. Optimal anti-thickenings of claw-free graphs (*with* Andrew King), *manuscript*
11. On the Erdős-Lovász Tihany Conjecture in claw-free graphs, (*with* Alexandra Fradkin and Matthieu Plumettaz), *manuscript*