

# Benjamin Schröter

## List of Publications

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### Research Articles

1. **Massively parallel computation of tropical varieties, their positive part, and tropical Grassmannians** with Dominik Bendle, Janko Böhm, and Yue Ren; 2024 in *Journal of Symbolic Computation*, special issue MEGA 2022, Vol. 120, 102224, DOI: 10.1016/j.jsc.2023.102224
2. **The Merino-Welsh conjecture for split matroids**  
with Luis Ferroni; 2023 in *Annals of Combinatorics*, No. 27, pp. 737–748, DOI: 10.1007/s00026-022-00628-w
3. **Parametric shortest-path algorithms via tropical geometry**  
with Michael Joswig; 2022 in *Mathematics of Operations Research*, 47, No. 3, pp. 2065–2081, DOI: 10.1287/moor.2021.1199
4. **Ehrhart polynomials of rank two matroids**  
with Luis Ferroni and Katharina Jochemko; 2022 in *Advances in Applied Mathematics*, Vol. 141, 102410, 26 pages, DOI: 10.1016/j.aam.2022.102410
5. **Correlation bounds for fields and matroids**  
with June Huh and Botong Wang; 2022 in *Journal of the European Mathematical Society*, No. 24, pp. 1335–1351, DOI: 10.4171/JEMS/1119
6. **Reconstructibility of matroid polytopes**  
with Guillermo Pineda-Villavicencio; 2022 in *SIAM Journal on Discrete Mathematics*, Vol. 36, pp. 490–508, DOI: 10.1137/21M1401176
7. **Moduli spaces of codimension-one subspaces in a linear variety and their tropicalization**  
with Philipp Jell, Hannah Markwig, and Felipe Rincón; 2022 in *Electronic Journal of Combinatorics* 29(2) P2.31, 33 pages, DOI: 10.37236/10674
8. **On local Dressians of matroids**  
with Jorge Alberto Olarte and Marta Panizzut; 2019 in *Algebraic and Geometric Combinatorics on Lattice Polytopes*. Proceedings of the Summer Workshop on Lattice Polytopes, Osaka 2018. Editors: Takayuki Hibi and Akiyoshi Tsuchiya, pp. 309–329, DOI: 10.1142/9789811200489\_0020
9. **Multi-splits and tropical linear spaces from nested matroids**  
2019 in *Discrete & Computational Geometry*, 61.3, pp. 661–685, DOI: 10.1007/s00454-018-0021-1
10. **Algorithms for tight spans and tropical linear spaces**  
with Simon Hampe and Michael Joswig; 2019 in *Journal of Symbolic Computation*, special issue MEGA 2017, Vol. 91, pp. 116–128, DOI: 10.1016/j.jsc.2018.06.016

11. **The degree of a tropical basis**  
with Michael Joswig; 2018 in *Proceedings of the American Mathematical Society*, 146, pp. 961–970, DOI: 10.1090/proc/13787
12. **Matroids from hypersimplex splits**  
with Michael Joswig; 2017 in *Journal of Combinatorial Theory Series A*, Vol. 151, pp. 254–284, DOI: 10.1016/j.jcta.2017.05.001
13. **Linear programs and convex hulls over fields of Puiseux fractions**  
with Michael Joswig, Georg Loho, and Benjamin Lorenz; 2016 in *Lecture Notes in Computer Science, Mathematical Aspects of Computer and Information Sciences. MACIS 2015 – 6th International Conference*, pp. 429–445, DOI: 10.1007/978-3-319-32859-1\_37

## Thesis

14. **Matroidal subdivisions, Dressians and tropical Grassmannians**  
Ph.D. thesis (Dissertation) for mathematics at Technische Universität Berlin, 2018.  
DOI: 10.14279/depositonce-6594

## Preprints

15. **Matroids in OSCAR**  
with Daniel Corey and Lukas Kühne; book chapter for “*The OSCAR book*”; arXiv: 2311.08792
16. **Enumerating the faces of split matroid polytopes**  
with Luis Ferroni; arXiv: 2310.05487
17. **Valuative invariants for large classes of matroids**  
with Luis Ferroni; arXiv: 2208.04893

## Poster and other publications

18. **Tropical Grassmannian  $T\text{Gr}(2,6)$**   
with Michael Joswig; interactive model for DGD Gallery
19. **Dressians and Tropical Grassmannians**  
with Michael Joswig; Poster presented at Effective Methods in Algebraic Geometry - MEGA 2015
20. **2048 - Contribution in “Mitteilungen der Deutschen Mathematiker-Vereinigung”**  
with Antje Schulz; *Mitteilungen der Deutschen Mathematiker-Vereinigung*, 22(3) p. 178
21. **Conference report: polymake workshop at TU Berlin**  
with André Wagner; *Computeralgebra Rundbrief* 2015 (56)
22. **Dissertations in computational algebra**  
*Computeralgebra Rundbrief* 2018 (62)