

# List of publications

Simon Telen

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## 1 Publications in peer reviewed journals

1. Fulvio Gesmundo, Leonie Kayser, and Simon Telen. “Hilbert functions of chopped ideals”. In: *Journal of Algebra* 666 (2025), pp. 415–445. ISSN: 0021-8693. DOI: <https://doi.org/10.1016/j.jalgebra.2024.11.017>
2. Daniele Agostini, Claudia Fevola, Anna-Laura Sattelberger, and Simon Telen. “Vector spaces of generalized Euler integrals”. In: *Communications in Number Theory and Physics* 18.2 (2024), pp. 327–370. DOI: <https://dx.doi.org/10.4310/CNTP.2024.v18.n2.a2>
3. Claudia Fevola, Sebastian Mizera, and Simon Telen. “Principal Landau determinants”. In: *Computer Physics Communications* 303 (2024), p. 109278. ISSN: 0010-4655. DOI: <https://doi.org/10.1016/j.cpc.2024.109278>
4. Barbara Betti, Marta Panizzut, and Simon Telen. “Solving equations using Khovanskii bases”. In: *Journal of Symbolic Computation* 126 (2025), p. 102340. ISSN: 0747-7171. DOI: <https://doi.org/10.1016/j.jsc.2024.102340>
5. Claudia Fevola, Sebastian Mizera, and Simon Telen. “Landau Singularities Revisited: Computational Algebraic Geometry for Feynman Integrals”. In: *Phys. Rev. Lett.* 132 (10 Mar. 2024), p. 101601. DOI: [10.1103/PhysRevLett.132.101601](https://doi.org/10.1103/PhysRevLett.132.101601)
6. Saiei-Jaeyeong Matsubara-Heo, Sebastian Mizera, and Simon Telen. “Four lectures on Euler integrals”. In: *SciPost Phys. Lect. Notes* (2023), p. 75. DOI: <https://scipost.org/10.21468/SciPostPhysLectNotes.75>
7. Rob Claes, Karl Meerbergen, and Simon Telen. “Contour Integration for Eigenvector Nonlinearities”. In: *SIAM Journal on Matrix Analysis and Applications* 44.4 (2023), pp. 1619–1644. DOI: [10.1137/22M1497985](https://doi.org/10.1137/22M1497985)
8. Dmitrii Pavlov, Bernd Sturmfels, and Simon Telen. “Gibbs manifolds”. In: *Information Geometry* (2023). DOI: <https://doi.org/10.1007/s41884-023-00111-2>
9. Timothy Duff, Simon Telen, Elise Walker, and Thomas Yahl. “Polyhedral homotopies in Cox coordinates”. In: *Journal of Algebra and Its Applications* (2023), p. 2450073. DOI: <https://doi.org/10.1142/S0219498824500737>
10. Bernd Sturmfels, Simon Telen, François-Xavier Vialard, and Max von Renesse. “Toric geometry of entropic regularization”. In: *Journal of Symbolic Computation* 120 (2024), p. 102221. ISSN: 0747-7171. DOI: <https://doi.org/10.1016/j.jsc.2023.102221>

11. Daniele Agostini, Taylor Brysiewicz, Claudia Fevola, Lukas Kühne, Bernd Sturmfels, Simon Telen, and Thomas Lam. “Likelihood degenerations”. In: *Advances in Mathematics* 414 (2023), p. 108863. ISSN: 0001-8708. DOI: <https://doi.org/10.1016/j.aim.2023.108863>
12. Michael Borinsky, Anna-Laura Sattelberger, Bernd Sturmfels, and Simon Telen. “Bayesian Integrals on Toric Varieties”. In: *SIAM Journal on Applied Algebra and Geometry* 7.1 (2023), pp. 77–103. DOI: <https://doi.org/10.1137/22M1490569>
13. Simon Telen and Nick Vannieuwenhoven. “A Normal Form Algorithm for Tensor Rank Decomposition”. In: *ACM Trans. Math. Softw.* 48.4 (Dec. 2022). ISSN: 0098-3500. DOI: <https://doi.org/10.1145/3555369>
14. Sebastian Mizera and Simon Telen. “Landau discriminants”. In: *Journal of High Energy Physics* 2022.8 (2022), pp. 1–57. DOI: [https://doi.org/10.1007/JHEP08\(2022\)200](https://doi.org/10.1007/JHEP08(2022)200)
15. Matías R Bender and Simon Telen. “Toric eigenvalue methods for solving sparse polynomial systems”. In: *Mathematics of Computation* 91.337 (2022), pp. 2397–2429. DOI: <https://doi.org/10.1090/mcom/3744>
16. Bernd Sturmfels and Simon Telen. “Likelihood equations and scattering amplitudes”. In: *Algebraic Statistics* 12.2 (2021), pp. 167–186. DOI: <https://doi.org/10.2140/astat.2021.12.167>
17. Simon Telen, Marc Van Barel, and Jan Verschelde. “A Robust Numerical Path Tracking Algorithm for Polynomial Homotopy Continuation”. In: *SIAM Journal on Scientific Computing* 42.6 (2020), A3610–A3637. DOI: [10.1137/19M1288036](https://doi.org/10.1137/19M1288036)
18. Simon Telen, Sascha Timme, and Marc Van Barel. “Backward error measures for roots of polynomials”. In: *Numerical Algorithms* 87.1 (2021), pp. 19–39. DOI: <https://doi.org/10.1007/s11075-020-00956-z>
19. Simon Telen. “Numerical root finding via Cox rings”. In: *Journal of Pure and Applied Algebra* 224.9 (2020), p. 106367. ISSN: 0022-4049. DOI: <https://doi.org/10.1016/j.jpaa.2020.106367>
20. Bernard Mourrain, Simon Telen, and Marc Van Barel. “Truncated normal forms for solving polynomial systems: Generalized and efficient algorithms”. In: *Journal of Symbolic Computation* 102 (2021), pp. 63–85. ISSN: 0747-7171. DOI: <https://doi.org/10.1016/j.jsc.2019.10.009>
21. Simon Telen, Bernard Mourrain, and Marc Van Barel. “Solving Polynomial Systems via Truncated Normal Forms”. In: *SIAM Journal on Matrix Analysis and Applications* 39.3 (2018), pp. 1421–1447. DOI: <https://doi.org/10.1137/17M1162433>
22. Simon Telen and Marc Van Barel. “A stabilized normal form algorithm for generic systems of polynomial equations”. In: *Journal of Computational and Applied Mathematics* 342 (2018), pp. 119–132. ISSN: 0377-0427. DOI: <https://doi.org/10.1016/j.cam.2018.04.021>

## 2 Conference proceedings

1. Simon Telen, Bernard Mourrain, and Marc Van Barel. “Truncated normal forms for solving polynomial systems”. In: *ACM Communications in Computer Algebra* 52.3 (2019), pp. 78–81

### 3 Book chapters

1. Simon Telen. “Systems of polynomial equations: theory and practice”. In: *Polynomial Optimisation, Moments, and Applications, Springer Optimization and Its Applications*, edited by Michal Kočvara, Bernard Mourrain and Cordian Riener (2023). DOI: <https://doi.org/10.1007/978-3-031-38659-6>

### 4 Preprints

1. Leonie Kayser, Andreas Kretschmer, and Simon Telen. “Logarithmic Discriminants of Hyperplane Arrangements”. In: *arXiv:2410.11675* (2024)
2. Barbara Betti, Viktoriia Borovik, and Simon Telen. “Proudfoot-Speyer degenerations of scattering equations”. In: *arXiv:2410.03614* (2024)
3. Simon Telen and Maximilian Wiesmann. “Euler Stratifications of Hypersurface Families”. In: *arXiv:2407.18176* (2024)
4. Dmitrii Pavlov and Simon Telen. “Santaló Geometry of Convex Polytopes”. In: *arXiv:2402.18955* (2024) (accepted for publication in SIAM Journal of Applied Algebra and Geometry)
5. Kristian Ranestad, Rainer Sinn, and Simon Telen. “Adjoint and Canonical Forms of Tree Amplituhedra”. In: *arXiv:2402.06527* (2024) (accepted for publication in Mathematica Scandinavica)
6. Zaïneb Bel-Afia, Chiara Meroni, and Simon Telen. “Chebyshev Varieties”. In: *arXiv:2401.12140* (2024)
7. Kemal Rose, Bernd Sturmfels, and Simon Telen. “Tropical Implicitization Revisited”. In: *arXiv:2306.13015* (2023)
8. Saiei-Jaeyeong Matsubara-Heo and Simon Telen. “Twisted cohomology and likelihood ideals”. In: *arXiv:2301.13579* (2023) (accepted for publication in Advances in Applied Mathematics)
9. Paul Breiding, Mateusz Michałek, Leonid Monin, and Simon Telen. “The Algebraic Degree of Coupled Oscillators”. In: *arXiv:2208.08179* (2022)
10. Simon Telen. “Introduction to Toric Geometry”. In: *arXiv:2203.01690* (2022)
11. Matías R Bender and Simon Telen. “Yet another eigenvalue algorithm for solving polynomial systems”. In: *arXiv:2105.08472* (2021)
12. Kathlén Kohn, Ragni Piene, Kristian Ranestad, Felix Rydell, Boris Shapiro, Rainer Sinn, Miruna-Stefana Sorea, and Simon Telen. “Adjoint and Canonical Forms of Polypols”. In: *arXiv:2108.11747* (2021) (accepted for publication in Documenta Mathematica)