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List of publications and preprints

Books

A. W. Górny and J.M. Mazón, Functions of Least Gradient, Monographs in Mathematics, vol. 110, Birkhäuser, 2024, ISBN 978-3-031-51880-5, doi.org/10.1007/978-3-031-51881-2.

Journal articles

1. W. Górny, P. Rybka, A. Sabra, *Special cases of the planar least gradient problem*, Nonlinear Anal. **151** (2017), pp. 66-95, doi.org/10.1016/j.na.2016.11.020.
2. W. Górny, *Planar least gradient problem: existence, regularity and anisotropic case*, Calc. Var. Partial Differential Equations **57** (4) (2018), Art. 98, doi.org/10.1007/s00526-018-1378-y.
3. W. Górny, *(Non)uniqueness of minimizers in the least gradient problem*, J. Math. Anal. Appl. **468** (2018), pp. 913–938, doi.org/10.1016/j.jmaa.2018.08.038.
4. W. Górny, *L^p regularity of least gradient functions*, Proc. Amer. Math. Soc. **148** (7) (2020), pp. 3009–3019, doi.org/10.1090/proc/15031.
5. W. Górny, *Least gradient problem with respect to a non-strictly convex norm*, Nonlinear Anal. **200** (2020), 112049, doi.org/10.1016/j.na.2020.112049.
6. W. Górny, J.M. Mazón, *Least gradient functions in metric random walk spaces*, ESAIM: COCV **27** (2021), S28, doi.org/10.1051/cocv/2020087.
7. W. Górny, *Existence of minimisers in the least gradient problem for general boundary data*, Indiana Univ. Math. J. **70** (2021), no. 3, pp. 1003–1037, doi.org/10.1512/iumj.2021.70.8420.
8. W. Górny, *Bourgain-Brezis-Mironescu approach in metric spaces with Euclidean tangents*, J. Geom. Anal. **32** (4) (2022), Art. 128, doi.org/10.1007/s12220-021-00861-4.
9. W. Górny, *Local and nonlocal 1-Laplacian in Carnot groups*, Ann. Fenn. Math. **47** (1) (2022), 427–456, doi.org/10.54330/afm.114742.
10. S. Dweik, W. Górny, *Least gradient problem on annuli*, Analysis & PDE **15** (3) (2022), pp. 699–725, doi.org/10.2140/apde.2022.15.699.
11. W. Górny, J.M. Mazón, *On the p-Laplacian evolution equation in metric measure spaces*, J. Funct. Anal. **283** (2022), 109621, doi.org/10.1016/j.jfa.2022.109621.
12. W. Górny, *The trace space of anisotropic least gradient functions depends on the anisotropy*, Math. Ann. **387** (2023), 1343–1365, doi.org/10.1007/s00208-022-02488-4.

13. S. Dweik, W. Górny, *Optimal transport approach to Sobolev regularity of solutions to the weighted least gradient problem*, SIAM J. Math. Anal. **55** (2023), no. 3, 1916–1948, doi.org/10.1137/21M1468358.
14. W. Górny, *Applications of optimal transport methods in the least gradient problem*, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) **24** (2023), pp. 1817–1851, doi.org/10.2422/2036-2145.202105_049.
15. W. Górny, J.M. Mazón, *The Neumann and Dirichlet problems for the total variation flow in metric measure spaces*, Adv. Calc. Var. **17** (2024), 131–164, doi.org/10.1515/acv-2021-0107.
16. W. Górny, J.M. Mazón, *The Anzellotti-Gauss-Green formula and least gradient functions in metric measure spaces*, Commun. Contemp. Math. **26** (2024), no. 6, 2350027, doi.org/10.1142/S021919972350027X.
17. M. Friedrich, W. Górny, U. Stefanelli, *The double-bubble problem on the square lattice*, Interfaces Free Bound. **26** (2024), no. 1, pp. 79–134, doi.org/10.4171/ifb/510.
18. W. Górny, *Least gradient problem with Dirichlet condition imposed on a part of the boundary*, Calc. Var. Partial Differential Equations **63** (2024), Art. 58, doi.org/10.1007/s00526-023-02646-9.
19. M. Friedrich, W. Górny, U. Stefanelli, *A characterization of ℓ_1 double bubbles with general interface interaction*, Adv. Calc. Var. (2025), doi.org/10.1515/acv-2023-0131.
20. W. Górny, *Weak solutions to gradient flows of functionals with inhomogeneous growth in metric spaces*, J. Evol. Equ. **25** (2025), Art. 44, doi.org/10.1007/s00028-025-01071-z.
21. W. Górny, J.M. Mazón, *A duality-based approach to gradient flows of linear growth functionals*, Publ. Mat., to appear (preprint available at arXiv:2212.08725).
22. W. Górny, J.M. Mazón, J. Toledo, *Evolution problems with perturbed 1-Laplacian type operators on random walk spaces*, Math. Ann., to appear (preprint available at arXiv:2410.15203).

Conference proceedings

23. W. Górny, J.M. Mazón, *Weak solutions to gradient flows in metric measure spaces*, Proc. Appl. Math. Mech. **22**:1 (2022), e202200099, doi.org/10.1002/pamm.202200099.
24. W. Górny, J.M. Mazón, *Weak solutions to the total variation flow in metric measure spaces*, in: Ferreira et al. (eds.), Proceedings book. XXVII Congreso de Ecuaciones Diferenciales y XVII Congreso de Matemática Aplicada, Zaragoza, July 18th–22nd, 2022. Prensas de la Universidad de Zaragoza, pp. 55–62, 2023, doi.org/10.26754/uz.978-84-18321-66-5.

Preprints

25. W. Górny, *Strongly anisotropic Anzellotti pairings and their applications to the anisotropic p-Laplacian*, preprint (2023), available at arXiv:2305.18876.
26. S. Buccheri, W. Górny, *A metric counterpart of the Gu-Yung formula*, preprint (2024), available at arXiv:2403.13475.
27. M. Friedrich, W. Górny, U. Stefanelli, *The ℓ_1 double-bubble problem in three dimensions*, preprint (2024), available at arXiv:2403.19295.
28. W. Górny, M. Łasica, A. Matsoukas, *Euler–Lagrange equations for variable-growth total variation*, preprint (2025), available at arXiv:2504.13559.