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CV DANIELA DI DONATO

Contact: daniela.didonato@unitn.it

S.S.D. MAT/05 Analisi Matematica

ORCID: **0000-0002-8425-2082**

Education

- **May 2022 – May 2023:** Post doctoral researcher, Università Politecnica delle Marche, Ancona, Italy.
- **2021- April 2022:** Post doctoral researcher, SISSA, Trieste, Italy.
- **2020:** Post doctoral researcher, Department of Mathematics and Statistics of the University of Jyväskylä, Finland.
- **2013-2017:** PhD student, University of Trento, Trento, Italy, Department of Mathematics.
- **2009-2011:** Laurea Magistrale (M.S.), University of Perugia, Perugia, Italy, Department of Mathematics.
- **2006-2009:** Laurea Triennale (B.S.), University of Perugia, Perugia, Italy, Department of Mathematics.

Invited lecture

- 26/10/2021-6/11/2021, University of Fribourg (Switzerland), under the supervision of Prof. Le Donne.

Seminars

- Seminar: “A new point of view for intrinsically Lipschitz graphs in the Franchi, Serapioni and Serra Cassano sense in metric spaces”, Trento, New Trends in Geometric & Variational PDEs, 21 February, 2023
- Seminar: “A new point of view for intrinsically Lipschitz graphs in the Franchi, Serapioni and Serra Cassano sense in metric spaces”, Ancona (Italy), Variational Methods and Evolution Equations, 2 September, 2022
- Seminar: “A new point of view for intrinsically Lipschitz graphs in the Franchi, Serapioni and Serra Cassano sense in metric spaces”, Padova (Italy), Mini-courses in Mathematical Analysis 2022, 22 June, 2022

- Seminar: “Intrinsic Lipschitz sections in metric spaces”, SISSA (Italy), Junior Math Days, 22 December, 2021
- Seminar: “Rectifiability in Carnot groups”, SISSA (Italy), 5 November, 2021
- Seminar: “Rectifiability in Carnot groups”, Fribourg (Switzerland), 3 November, 2021
- Seminar: “ C^1 submanifolds and Lipschitz graphs in Carnot groups”, Jyväskylä (Finland), 19 October, 2020
- Seminar: “Uniform intrinsic differentiability and regular surfaces in Carnot groups”, Pisa (Italy), 12 November, 2019
- Final exam: “Intrinsic Differentiability and Intrinsic Regular Surfaces in Carnot groups”, University of Trento, Trento (Italy), November 9, 2017.
- Doctoral seminar: “Intrinsic Differentiability and Intrinsic Regular Surfaces in Carnot groups”, University of Trento, Trento (Italy), October 4, 2016.
- Doctoral seminar: “Intrinsic Regular Hypersurfaces in Carnot group of step 2”, University of Trento, Trento (Italy), October 8, 2015.
- Doctoral seminar: “Coomologia di Cech”, University of Trento, Trento (Italy), May 7 2014.

Presentation of paper or Poster

Poster in Sub-Riemannian Geometry and Beyond. II, Jyväskylä (Finland), February 21, 2019.

Teaching Experience

Teaching Assistant:

- 2022-2023 Mathematical Analysis 1, Università Politecnica delle Marche-Ancona
- 2015-2016 Mathematical Analysis 1, University of Trento
- 2014-2015 Mathematical Analysis 1, University of Trento
- 2010-2011 Geometry 1, University of Perugia

Teacher of Mathematics and Physics:

- 2017-2018 Liceo “Cantore”, Brunico (BZ)
- 2012-2013 Liceo paritario “Cameli”, Teramo (TE)

Teacher of Mathematics:

- 2018-2019 (not all) Bolzano (BZ)
- September – December 2019 Liceo “Gandhi”, Merano (BZ)

Language

Italian: mother tongue

English: Level B2

Research - Published or Accepted Papers

[10] V.Ambrosio, D.Di Donato, “An existence result for a fractional critical (p,q) -Laplacian problem with discontinuous nonlinearity”, *Mediterranean Journal of Mathematics*, **20**, 288 (2023), <https://doi.org/10.1007/s00009-023-02478-z>

[9] D.Di Donato, “The intrinsic Hopf-Lax semigroup vs. the intrinsic slope”, accepted to *Journal of Mathematical Analysis and Applications*, , Volume 523, Issue 2, 15 July 2023, 127051, <https://doi.org/10.1016/j.jmaa.2023.127051>.

[8] D.Di Donato, “Some remarks about intrinsic Lipschitz and tame maps in Carnot groups of step 2”, accepted to *Riv. Mat. Univ. Parma*.

[7] G.Antonelli, D.Di Donato, S.Don, “Distributional solutions of Burgers’ type equations for intrinsic graphs in Carnot group of step 2”, accepted to *Potential Analysis*, 2022, <https://doi.org/10.1007/s11118-022-09992-x>

[6] D.Di Donato, K.Fässler, “Extensions and corona decompositions of low-dimensional intrinsic Lipschitz graphs in Heisenberg groups”, *Annali di Matematica Pura ed Applicata* **201**, Page 453-486, 2022.

[5] G.Antonelli, D.Di Donato, S.Don, E.Le Donne, “Characterizations of uniformly differentiable co-horizontal intrinsic graphs in Carnot groups”, accepted to *Annales de l’Institut Fourier*.

[4] D.Di Donato, K.Fässler, T.Orponen, “Metric rectifiability of H-regular surfaces with Hölder continuous horizontal normal”, *International Mathematics Research Notices*, Volume 2022, Issue 22, November 2022, Pages 17909-17975, (2021), <https://doi.org/10.1093/imrn/rnab227>.

[3] D.Di Donato, "Intrinsic Lipschitz graphs in Carnot groups of step 2", *Annales Academiæ Scientiarum Fennicæ Mathematica*, Volumen 45, (2020), 1013-1063.

[2] D.Di Donato, "Intrinsic differentiability and Intrinsic Regular Surfaces in Carnot groups", *Potential Analysis* (2020) POTA-D-18-00178R1, Volumen 54, 1-39, 2021

[1] D.Di Donato, D.Mugnai, "On a Highly Nonlinear Self-Obstacle Optimal Control Problem", *Applied Mathematics & Optimization*: Vol. 72, Issue 2 (2015), Page 261-290.

Research – Preprint

[a] D.Di Donato, "Normed spaces using intrinsically Lipschitz sections and Extension Theorem for the intrinsically Hölder sections", preprint, [arxiv.2301.01735](https://arxiv.org/abs/2301.01735)

[b] D.Di Donato, "Non-symmetric intrinsic Hopf-Lax semigroup vs. intrinsic Lagrangian", preprint, [arxiv.2211.12822](https://arxiv.org/abs/2211.12822)

[c] D.Di Donato, "Intrinsic Lipschitz sections of no-linear quotient maps", preprint, [arxiv.2206.07792](https://arxiv.org/abs/2206.07792)

[d] D.Di Donato, "Intrinsic Cheeger energy for the intrinsically Lipschitz constants, preprint, [arxiv.2205.15851](https://arxiv.org/abs/2205.15851)

[e] D.Di Donato, "Intrinsically quasi-isometric sections in metric spaces", preprint, [arxiv.2205.03351](https://arxiv.org/abs/2205.03351)

[f] D.Di Donato, "Intrinsically Hölder sections in metric spaces", preprint, [arxiv.2205.02688](https://arxiv.org/abs/2205.02688)

[g] D.Di Donato, "A note about intrinsically Lipschitz constants", preprint, [arxiv.2205.02404](https://arxiv.org/abs/2205.02404)

[h] D.Di Donato, "Intrinsically Lipschitz graphs on semidirect products of groups", preprint, [arxiv.2205.02403](https://arxiv.org/abs/2205.02403)

[i] D.Di Donato, "Ahlfors-David regularity of intrinsically quasi-symmetric sections in metric spaces", preprint, [arxiv.2205.02400](https://arxiv.org/abs/2205.02400)

[l] D.Di Donato, Le Donne, “Intrinsically Lipschitz sections and applications to metric group”, preprint, [arXiv:2005.02086](https://arxiv.org/abs/2005.02086)

[m] D.Di Donato, “Intrinsic Lipschitz maps vs. Lagrangian type solutions in Carnot groups of step 2”, preprint, [arXiv:2108.02298](https://arxiv.org/abs/2108.02298)

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