

Marco Damele

Curriculum Vitae

Cagliari, Italy
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Profile

PhD student in Mathematics and Computer Science at the University of Cagliari, under the supervision of Professor Andrea Loi. My research focuses on skew braces and their connections with finite group theory, the Yang–Baxter equation, Hopf–Galois theory, and Lie and topological algebraic structures.

Education

- Nov 2025 – **PhD in Mathematics and Computer Science**, *University of Cagliari*, Cagliari, Italy
present Supervisor: Professor Andrea Loi.
- Oct 2023 – **Master's Degree in Mathematics**, *University of Cagliari*, Cagliari, Italy
Jul 2025 110/110 cum laude.
- Sep 2019 – **Bachelor's Degree in Mathematics**, *University of Cagliari*, Cagliari, Italy
Feb 2023 110/110 cum laude.

Research Interests

Skew braces; finite group theory; Lie and topological skew braces; set-theoretic solutions of the Yang–Baxter equation; Hopf–Galois theory.

Published and Accepted Papers

- 2026 **Finite skew braces whose additive group is a Z -group**. Accepted for publication in *Archiv der Mathematik*. arXiv:2603.22980.
- 2026 **A rigidity theorem for skew braces with multiplicative group $S \times T$** . Accepted for publication in the *International Journal of Group Theory*. arXiv:2603.17805.
- 2026 **Structural and rigidity properties of Lie skew braces**, with Andrea Loi. *Journal of Algebra* **695** (2026), 356–383. DOI: 10.1016/j.jalgebra.2026.01.048.
- 2026 **Finite groups in which every proper characteristic subgroup is cyclic**, with Fabio Mastrogiacomio. *Mediterranean Journal of Mathematics* **23** (2026), Article 73. DOI: 10.1007/s00009-026-03068-5.
- 2025 **Finite groups in which every proper normal subgroup is cyclic**, with Fabio Mastrogiacomio. *Advances in Group Theory and Applications*.

Preprints

- 2026 **Classification of finite left-simple skew braces**. arXiv:2609.35542.
- 2026 **Inverse Baer deformations and finite simple skew braces of nilpotent type**. arXiv:2609.24640.
- 2026 **Kernel–wreath constructions and infinite families of finite simple skew braces**. arXiv:2609.20401.

- 2026 **Ideals and Solvability in Skew Braces**, with Gülin Ercan. arXiv:2607.19955.
- 2026 **Simple Skew Braces with Cyclic Sylow Subgroups**. arXiv:2607.17125.
- 2026 **A Schur–Zassenhaus Theorem for Finite Skew Braces**. arXiv:2606.29295.
- 2026 **On finite perfect two-sided skew braces**. arXiv:2605.22302.
- 2026 **Solvability and Rigidity for Topological Skew Braces**, with Andrea Loi. arXiv:2605.07609.
- 2026 **On simple compact Lie skew braces**, with Andrea Loi. arXiv:2604.22373.
- 2026 **On a Cauchy theorem for finite skew braces**, with Vicent Pérez-Calabuig. arXiv:2602.22080.
- 2025 **Galois’ Professor’s Revenge**, with Andrea Loi, Martin Mereb and Leandro Vendramin. arXiv:2509.09662.

Research Visits and International Experience

- Nov 2025 – **Visiting PhD Student**, *Universitat de València*, Valencia, Spain
- Feb 2026 Research visit hosted by Professor Vicent Pérez-Calabuig. Funded by the University of Cagliari.
- Aug 2024 – **Erasmus+ Program**, *Radboud University*, Nijmegen, Netherlands
- Jan 2025 Funded by the University of Cagliari.

Conferences and Talks

- 17–21 May **Invited research talk**, *Universitat de València*, Valencia, Spain
- 2027 Invited visit and research talk.
- 23–28 Jun **Advances in Group Theory and Applications 2025 (AGTA 2025)**, *University of Naples Federico II*, Naples, Italy
- 2025 Conference participation.
- 17–21 Jun **Groups and Algebras in Bicocca for Young Algebraists (GABY 2024)**, *University of Milano-Bicocca*, Milan, Italy
- 2024 Conference participation.

Teaching Experience

- Mar 2025 – **PLS Tutor – Algebra I**, *University of Cagliari*, Cagliari, Italy
- Jul 2025 Support activities for first-year Mathematics students.
- Mar 2024 – **Tutor – Analysis III**, *University of Cagliari*, Cagliari, Italy
- Sep 2024 Tutoring for the Analysis III course in Mathematics.
- Oct 2023 – **Tutor – Analysis I**, *University of Cagliari*, Cagliari, Italy
- Feb 2024 Tutoring for the Analysis I course in Engineering and Architecture.
- Sep 2023 – **Tutor for Alignment Course**, *University of Cagliari*, Cagliari, Italy
- Oct 2023 Support for first-year students in Engineering and Architecture.
- Oct 2022 – **Buddy Tutor**, *University of Cagliari*, Cagliari, Italy
- Feb 2023 Support and guidance for first-year Mathematics students.

Awards and Training

2023–2025 **Excellence Program for Outstanding Master's Students**, University of Cagliari.
Competitive program including additional advanced training and funding for participation in conferences and research activities.

2026 Successfully completed the PhD course on *Power Monoids*, taught by Salvatore Tringali.

■ Academic Service

Reviewer for *Mathematical Reviews* (Reviewer No. 190028).

■ Outreach and Scientific Communication

Since 2022 **Mathematics outreach channel on YouTube**

Creator and presenter of educational material on mathematics, problem solving and accessible introductions to advanced topics.

Since 2021 **Founder and administrator of “Problemi di Matematica”**

Online mathematics community with more than 10,000 members, devoted to collaborative problem solving and mathematical discussion.

18 May 2025 **Public seminar: “The Magic of Prime Numbers”**, *University of Cagliari*, Cagliari, Italy

Outreach seminar during *Monumenti Aperti*.

■ Languages

Italian Native speaker

English B2

Good written and spoken communication skills.