
Martin Scotti

PhD Student in Mathematics,

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Education

- **2022-2025 (ongoing): PhD student**

Université Paris 8 - LAGA (AGC3), under the supervision of Wolfgang Schmid and Martino Borello, "Interactions between additive combinatorics and coding theory"

(2022) M.Sc. in Mathematics and Theoretical Computer Science (MPRI)

Université Paris Cité (P7), advisors: Prof W. Schmid and Prof M. Borello, mention très bien

(2021) M.Sc. in Mathematics (teaching) (agrégation - rank 86)

Sorbonne Université (P6), mention passable

M1 MIC (mathematics, computer science, cryptology) at Université Paris Diderot (P7), mention très bien

(2020) M.Sc. in Mathematics (research)

Sorbonne Université (P6), advisor: Prof Y. Lamzouri, mention assez bien

(2018) B.A. in Mathematics

Sorbonne Université (P6), mention très bien

MPSI - MP at Lycée Louis-le-Grand in Paris

Baccalauréat Mention Bien at Lycée Français de Vienne

Internships

(2022) M. Sc. internship at Université Paris 8 on the relation between coding theory and additive combinatorics, under the supervision of Prof W. Schmid and Prof M. Borello

(2020) M. Sc. internship at Université de Lorraine on the zeros of linear combinations of L-functions, under the supervision of Prof Y. Lamzouri

(2019) M1 internship at Université Paris 6 on Picard's small and big theorems in complex analysis, under the supervision of Pascal Dingoyan

Teaching

(2024-2025) M1: Analyse réelle et complexe (18h), L1: Théorie des graphes et combinatoire (64h), Université Paris 8

(2023-2024) M1: Analyse réelle et complexe (18h), L1: Théorie des graphes et combinatoire (64h), Université Paris 8

Research stays

November 2024 (5 weeks) at Università degli Studi di Campania "Luigi Vanvitelli" with Olga Polverino

December 2024 (1 week) at TU Delft with Anurag Bishnoi

Publications

1. M. Scotti, *On the lower bound for the length of minimal codes*, Discrete Mathematics, Volume 347, Issue 1 (2024)
2. M. Borello, W. Schmid, M. Scotti, *The geometry of intersecting codes and applications to additive combinatorics and factorization theory*, to appear in Journal of Combinatorial Theory, Series A

Talks

Invited talks

Intersecting codes and projective geometry, TU Delft combinatorics seminar, December 2024

Intersecting codes in the Hamming and in the rank metric, Number theory seminar at Université de Bordeaux, October 2024

Intersecting codes and their applications to additive combinatorics and factorization theory, AMS-UMI conference, Palermo, July 2024

On intersecting codes, fully-weighted 2-wise Davenport constants and related problems, AGC3 Seminar at Université Paris 8, January 2024

On intersecting codes, fully-weighted 2-wise Davenport constants and related problems, Barracuda seminar, Mortagne-sur-Gironde, January 2024

On the minimal length of minimal codes, SIAM AG23 Conference, Eindhoven, July 2023

On abelian group codes and the Davenport constant, Barracuda Seminar, Metabief, June 2022

Contributed talks

Intersecting codes and the 2-wise fully-weighted Davenport constant, Combinatorics 24, Carovigno, June 2024

On the minimal length of minimal codes, JC2 Seminar, Najac, October 2023

On the minimal length of minimal codes, 29th Nordic Congress of Mathematicians, Aalborg, July 2023

Organisation

Member of the organizing committee of the OpeRa 2024 conference on rank-metric codes in Caserta in February 2024

Funding

(2022-2025) **ANR Barracuda** (algeBrA, pRoofs, pRotocols, Algorithms, Curves and sURfaces for coDes and their Applications)

Preprints

1. M. Scotti, *Recent advances on minimal codes*, <https://arxiv.org/abs/2411.11882>